THE FOUNDRY

VOL. 14. DETROIT, MICH., JUNE, 1899. NO. 82.

THE CONVENTION.

The American Foundrymen's Association Holds Its Third Annual Meeting.

Conceded on All Sides to be the Most Enjoyable of All Meetings Thus Far Held.

The Pittsburg Foundrymen Provided a Most Magnificent Entertainment.

In practicaly everything that goes to make a successful meeting, the Convention of the American Foundrymen's Association, held in Pittsburg, left nothing to be desired.

The attendance, interest, weather, quality and quantity of entertainment, hospitality of entertainers and Pittsburg foundrymen generally, objects of interest, varied programme, etc., all combined to make the Pittsburg meeting a record breaker.

And in saying this, there is no disparagement whatever of the splendid meetings that had gone before, or of the efforts made by foundrymen and their friends in Philadelphia, Detroit, and Cincinnati to make the meetings held in those cities as enjoyable as possible.

At the first meeting in Philadelphia, where the Foundrymen's Association idea first bore fruit in the formation of the local association, and where these same foundrymen afterwards met and sent out invitations to the foundrymen of the country to meet, everything was more or less problematical.

The character of the attendance, and what would be the outcome, were all uncertain.

At the next meeting, held in Detroit, where all who came claimed they enjoyed themselvs very much, the Association was in its infancy, and had not commenced to be the great Association it is to-day.

The same conditions existed in a measure the following year when the Association accepted the very kind invitation extended by the foundry interests in Cincinnati, and met in the Queen City.

Evidences began to multiply, though, about this time, that these yearly meetings were beginning to attract considerable attention, and that those who attended took

J. S. SEAMAN,
THE NEWLY-ELECTED PRESIDENT.

a great measure of interest in all that was done or attempted.

While the reading and discussing of papers on practical or technical subjects is naturally one of the chief features of the gatherings of this character, it is quite noticeable that even those who take the very greatest interest in this portion of the proceedings take as much pleasure as any one in the social features, which, after all, comprise the chief attraction to all who attend.

As the Association gets older, new acquaintances are made and new friendships are formed among those who come annually to the meetings, and these naturally have a great influence in increasing the attendance year by year.

At each meeting many new faces are seen, and as they in their turn make acquaintances or meet old-time friends, they naturally look forward with pleasant anticipations to the next gathering.

Thus we have another reason for the fact that the registration in Pittsburg exceeded that of any previous meeting. In addition to this, the invitations and announcements of the Convention contained the information that those in attendance would have an opportunity of visiting the world famous plants of the Carnegie Company at Homestead, and of the Westinghouse Company at Wilmerding and East Pittsburg, respectively, and it is well known that large numbers of those present were influenced to attend by the opportunity to see these works in operation.

Foundrymen will always be interested in seeing the foundry processes in operation at the Air Brake plant of the Westinghouse Company.

THEY COMMENCE TO ARRIVE.

The members of the Association and their friends commenced to arrive on Monday, and by Monday evening, contrary to all precedents, there was a good number present, and old acquaintances were seeking each other out, and new ones being rapidly made.

Although the Convention did not open until Tuesday a. m., the committee in charge of registering arrivals, etc, with Mr. Robert Taylor as chairman, found it necessary to open up on Monday evening, and it was surprising to see the number of badges displayed in the hotel corridors before midnight.

As has been the custom previously, with each badge was given a number, this number corresponding with the printed bulletin issued several times during the meeting, the last one being neatly bound in book form.

THE SOUVENIRS.

It may be well to mention right here that in addition to the badges given everyone who registered, there were distributed various souvenirs that were carried away by the fortunate recipients to be preserved, doubtless, for a long time, in memory of the occasion. The one most widely distributed and very generaly admired was a book of engravings containing over one hundred beautiful views of points of interest in Pittsburg and vicinity, including the prominent buildings, river and park views, and glimpses of leading manufacturing establishments, as well as some statistical information concerning Pittsburg, and the value of its commerce, products, etc., and the names of the different committees having in charge the entertainment, as well as the personnel of said committees.

Then there was a miniature bath-tub given with the compliments of the Standard Mfg. Co., of Allegheny City, Pa.

There was the nickel-plated smoothing iron or "ruffler iron" given to the ladies who came to the convention from a distance by the Brittain & Matthes Co., and which was in great demand.

The Baush & Harris Tool Co., of Springfield, Mass., gave to a few of their friends a handsome aluminium pen tray.

J. W. Paxson Co., Foundry Supply and Equipment Dealers of Philadelphia, gave everybody neat leather-covered memorandum books.

L. S. Brown, proprietor of the Springfield Facing Co., Springfield, Mass., distributed a neat leather match box to each of his friends, and everybody who knows "Brown" is his friend.

The Keystone Coal & Coke Co., of Pittsburg, distributed a neat celluloid case containing court plasters.

The Sheriff Mfg. Co., of Milwaukee, Wis., gave away neat watch charms in the shape of a propeller wheel.

The committee who had charge of the registration and giving out of badges also looked after the printing of the daily bulletin, and only those who have ever had anything to do with a task of this sort can

have any idea of the magnitude of the labor involved.

It was necessary to be on duty from early morning till late at night, and it has never been done so well before.

THE CONVENTION OPENS.

The Convention itself opened on Tuesday morning, May 16th, in the club room of the Monongahela House, and the opening addresses, which have always hitherto been interesting and one of the features of the gathering, were up to all previous standards, and were closely listened to by the largest audience ever hitherto assembled on such an occasion.

The welcoming address by Mr. Wm. Yagle, the chairman of the executive committee, was straightforward and to the point, and made the foundrymen feel right from the start that any anticipations concerning the character of their welcome and entertainment were soon to be fuly realized.

WILLIAM YAGLE,

CHAIRMAN OF THE EXECUTIVE COMMITTEE APPOINTED BY PITTSBURG FOUNDRYMEN TO PROVIDE THE ENTERTAINMENT FOR THE CONVENTION.

Mr. Yagle then introduced Mayor W. J. Diehl, who made a very neat address of welcome of an appropriate character and incidentally referred to the fact that Pittsburg's first foundry was established in 1862, and the first stove foundry in 1830.

Then followed Mr. Clarence Burleigh, present District Attorney of Allegheny County, and a former patternmaker, who made a magnificant address of welcome on behalf of the foundry interests of Pittsburg and vicinity. Mr. Burleigh made many neat references to the business of a practical kind, indicating his familiarity with it, and these hits, coupled with his eloquence and personal magnetism, had the effect of inspiring those present to give him an ovation when he sat down.

Then followed Mr. John Bindley, president of Pittsburg's Chamber of Commerce, who delivered on behalf of the manufacturing interests of Pittsburg an address in which he in glowing terms set forth the city's eminence and supremacy as a manufacturing center. He said:

Pittsburg is much greater commercially than the statistics of the enumeration of her inhabitants would indicate. The census of 1890 placed within her municipal border 239,000 people, but, unfortunately for our statistical record, our border lines are very circumscribed; for instance, Allegheny County (of which Pittsburg is the capital) contains practically five cities, which are in fact as much integral parts of our city as those located within its boundary lines, and owing to a sentiment which seems false these conditions will not be changed prior to the taking of the 1900 census, and we may retain the present (viz., thirteenth) place in the list of cities, instead of attaining our proper position, the fourth city in the Union. According to the census of 1890, taking a circumference of 60 miles, with Pittsburg as the center, we had a larger population than any city west of the Alleghenies Mountains; within the same prescribed limits, astounding as it may appear, we had almost 100,000 more than Chicago, 500,000 more than Cincinnati, and 700,000 more than St. Louis. This will partially explain and account for our financial and commercial position in the business world. Located in the center of almost inexhaustible beds of the finest bituminous coal, settled by a people with a blending which makes them progressive, aggressive and unyielding in their determination, with an irresistible activity that has developed and created this wonderful and unique city into the capital of the greatest manufacturing empire in the world. The shipping facilities are of the best, with railroads diverging in every direction, with natural waterways, improved and improving, giving us miles

VIEW OF SOME OF THE THIRD CONVENTION, A. F. A., TAKEN AT CALHOUN PARK, PITTSBURG, MAY 18, 1899.

and miles of river frontage and harbor, eventually we will have a boating stage of water continuously during navigable season from the headwaters of the Monongahela to the Gulf of Mexico, and thence to every seaport. These shipping facilities are carefully guarded with jealous eye, as Pittsburgers fully recognize the value of the economies of cheap transportation, and it is ever the aim of those who foster the interest of our city to constantly demand better, greater and ever improving facilities.

To-day the world's supremacy in the metallurgical art is conceded to us. It has been wrested from Great Britain. The world is our market, and we stand almost without a rival, as our products are sent to every part of the civilized globe, and our name and fame will everywhere become as familiar as household words.

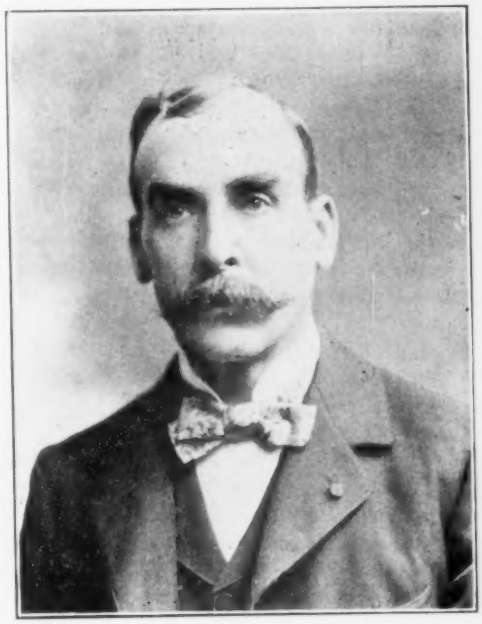
Our city is unique in its creation of wealth. Here the raw material is taken, and by the various processes developed until finally its value has been greatly multiplied, whereas in many manufacturing localities the cost of raw material is a very large per cent of the article produced.

Financially we have a banking capital (including surplus) of $40,000,000, and deposits of about $140,000,000. In clearing house exchanges we to-day are the fifth city in the Union, being exceeded only by New York, Boston, Chicago and Philadelphia.

As manufacturers and producers we are pre-eminent in the following, outranking in production any city in the world: Steel and iron, plate glass, table glassware, window glass, tin plate, steel and wrought iron pipe, coal and coke, air brakes, electrical machinery, pickles and condiments, oil and gas.

Our annual product of pig iron is over 3,000,000 gross tons, or 27 per cent of the total production of the United States. Our production of Bessemer steel is over 2,000,000 tons, or 37 per cent of the whole. Of open hearth steel our output is 1,500,000 tons, or 65 per cent of the whole. The total production of Bessemer and open hearth steel for the United States for the year 1898 was 8,829,500 tons, of which Pittsburg produced 3,500,000 tons, or 40 per cent of the whole. Of crucible steel we produced 60 per cent of the whole; of structural steel, 63 per cent; of plates and sheets, 33 per cent, and of wire and nails, 30 per cent. In the steel pipe and tube industry we lead the universe. Of coke we produce 8,500,000 tons, and our Connelsville coke is famous beyond compare. Our coal production in round numbers was 17,000,000 tons. The Pittsburg district produces of table glassware 63,000 tons annually; of window glass 40 per cent of the total production of the United States, and of plate glass 75 per cent of the whole. One firm has capacity to produce 5,000,000 dozen tumblers annually. In all these branches we have the greatest plants in existence, colossal in extent.

Oil and natural gas have been the source of great wealth to our community. The



ROBERT TAYLOR,
CHAIRMAN OF COMMITTEE OF REGISTRATION, BADGES, ETC.

product of oil, of which Pittsburg is the territorial and operating center, was last year over 35,000,000 barrels. The estimated daily consumption of natural gas in the United States is 200,000,000 feet, and Allegheny County consumes many times more than any other county or locality.

The name of Westinghouse in connection with the air brakes and electrical appliances is indissolubly associated with Pittsburg, and has added fame to our name the world over. Thus far I have only spoken of the tremendously great products of this locality, but in other lines of manufacture we are large in comparison with other cities. The

VIEW OF SOME OF THE THIRD CONVENTION, A. F. A., TAKEN AT CALHOUN PARK, PITTSBURG, MAY 18, 1899.

goods produced here are varied, and of great variety and extent. It would require volumes to tell their interesting story. We produce largely locomotives, lamp chimneys, aluminum, bottles, cigars, corks, whisky, and have immense baking establishments. We also have the greatest of steel car works, with a capacity of 35 cars per day, and other industrial establishments too numerous to mention. In every line our mercantile establishments are in keeping with this progressive age, and fully representative of our city, comparing favorably with those to be found elsewhere.

In tonnage we are the greatest creators of any city in the world. We have no peers. In 1898 our tonnage amounted to 50,000,000 tons, and this year promises to reach the enormous total of 60,000,000 tons; our car service was 2,000,000 cars, of 20 tons capacity each, placing us beyond all rivals. To this must be added our river tonnage. It is said that the tonnage of one of our immense establishments is greater than the whole combined tonnage of the Grand Trunk Railway of Canada, and much greater than the entire cotton crop of the South. Comparisons of this kind will leave their impressions of the vastness and extent of the business and commercial greatness of Pittsburg.

PRESIDENT C. S. BELL REPLIES.

Mr. C. S. Bell, the president of the Association, made a suitable acknowledgment of the many cordial greetings extended the Association, and said he felt sure he could say they were all fully appreciated by everyone present, and even those not there would be pleased to learn of the great hospitality of Pittsburg and Pittsburg's foundrymen. For his own part he always looked forward to the conventions of the Association with a great deal of interest, and he felt sure he was going to enjoy this one as much as any of its predecessors, and that it would be fully as profitable. He spoke at length upon the improved condition in trade and regretted that foundrymen generally had not all profited by the improvement in prices, as many were still filling contracts figured on the former prices of raw material.

GREETING OF GERMAN FOUNDRYMEN.

Dr. Moldenke then read a greeting sent to the Association from Berlin, congratulating the American foundrymen upon their enterprise in many ways, and especially on their success in making the scientific and practical blend profitably in their business.

The Secretary, John A. Penton, of Detroit, then read his report, showing a good cash balance on hand.

COMMITTEE APPOINTED TO WIRE REGRETS TO HOWARD EVANS.

Treasurer Howard Evans, being prevented from attending the meeting by illness, a resolution was adopted to the effect that a committee should be appointed to telegraph the convention's regrets and hope for his speedy recovery. The president appointed on this committee, Mr. J. S. Sterling, of Harlan & Hollingsworth, Wilmington, Del.,

C. S. BELL,
THE RETIRING PRESIDENT.

and W. A. Jones, of the W. A. Jones Foundry & Machine Co., Chicago, and F. H. Zimmers, of the Union Foundry & Machine Co., Pittsburg, Pa. The telegram sent read as follows:

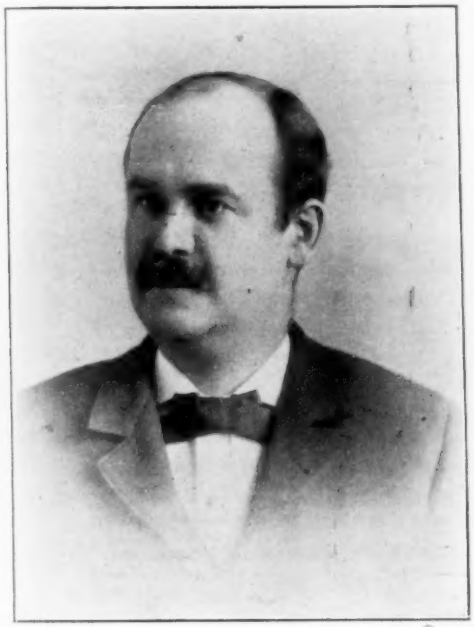
The American Foundrymen's Association, in the convention assembled, send greetings and sympathy and regret that you cannot be with them, and sincerely wish for your speedy recovery," and the reply that quickly flashed back over the wire from the Association's popular treasurer was as follows:

"Many thanks. Am with you in spirit. May the convention be a howling success."

COMMITTEE ON STANDARDIZING TESTS OF CAST IRON MAKES ITS REPORT.

Dr. Moldenke, of Pittsburg, then read the "Report of the Committee on Standardizing

Tests of Cast Iron." This report was a brief synopsis of the work done by the committee during the past year, the result of this work in detail being contained in the full report of the committee's work, which would appear in the Journal of the Association later on. This committee consists of Dr. R. G. G. Moldenke, Thos. D. West, J. S. Sterling and J. S. McDonald. The report gave a brief history of the committee's work, the care taken to make test bars and the kind of castings made from each grade of iron, etc. Lack of space will prevent its production in these columns until a subsequent issue. The report was discussed



F. H. ZIMMERS,
SECRETARY OF THE EXECUTIVE COMMITTEE OF THE PITTSBURG FOUNDRYMEN'S ASSOCIATION.

briefly by W. J. Keep, of Detroit, who referred in exceedingly complimentary terms to the committee's work, and said that its value could never be overestimated. Only those, he said, who had ever attempted to accomplish anything along similar lines could appreciate the difficulties encountered and the vastness of the undertaking. The report was received and the committee continued to carry on the work to its conclusion.

Mr. I. W. Frank, chairman of the entertainment committee, gave a brief verbal outline of the entertainment provided for the afternoon, after which an adjournment was taken.

EXCURSION TUESDAY AFTERNOON.

The entertainment committee provided cars and those in attendance upon the convention and a large number of ladies were given a trolley ride which took them through some very beautiful sections of the city, including a visit to the Carnegie Library, Museum, Art Gallery and Music Hall at East Pittsburg, Schenley Park and Highland Park.

EVENING SESSION.

This was the most numerously attended of all the convention's sessions, and those present were given a treat they will not soon forget. In the first place, M. A. W. Walker, of the Walker-Pratt Mnfg. Co., Boston, read a paper entitled, "A New England Foundry," the name giving a very poor idea of the excellent treat the author of the paper had prepared for those who had an opportunity of hearing him. It was illustrated with about ninety stereopticon views prepared expressly for this occasion. This paper, with such views as we can give space to, will appear in our July issue and be made a special feature.

Of almost equal interest and fully as much so to some of those present, was the paper by W. J. Keep entitled, "Original Methods of Handling Materials at the Works of the Michigan Stove Co., Detroit, Mich." Mr. Keep had his paper printed and copies had been generally distributed among all of those in attendance. He therefore gave a brief synopsis of it, while the description was made more easily understood by the aid of the stereopticon. We reproduce Mr. Keep's paper elsewhere.

PRESIDENT APPOINTS COMMITTEE ON NOMINATIONS.

Before the adjournment of the evening session, President Bell appointed the following committee on nomination of officers for the ensuing year: W. A. Jones, Chicago, Ill.; Dr. R. G. G. Moldenke, Pittsburg; Bartlett M. Shaw, Boston; Jas. S. Sterling, Wilmington, and J. P. Golden, Columbus, Ga.

WEDNESDAY MORNING.

Thos. D. West read the first paper, being more in the form of a report of the work done and the progress made by the committee appointed at the Cincinnati meeting

to formulate a plan for the standardizing of chemical analysis. The necessity of more uniformity in work of this character was fully described, that already done had been accomplished at an extremely low cost, and standardized drillings were being generally accepted as standard in the general foundry trade.

Mr. F. W. Bauer, of Sprinfield, Ohio, spoke at length on the result of the committee's work, and urged strongly the necessity of the committee conferring and getting together with the committee appointed by the American Chemical Society, and made a motion to that effect, which was unanimously adopted.

I. W. FRANK,
CHAIRMAN OF ENTERTAINMENT COMMITTEE.

Mr. James Powell, of Cincinnati, read a paper, entitled "History and Technics of Bronze Founding." This paper indicated considerable research, and went largely into the achievements of the ancients in the manufacture of brass and bronze work in their time. Coming down to more recent times, Mr. Powell went largely into business as it is conducted in these days, and this paper is likely to be regarded as an authority for a long time to come.

The Secretary then read a very interesting paper by John M. Richardson, of Providence, R. I., entitled "The Importance of Fillets and Round Corners on Modern Machinery Castings." The discussion which followed the reading of this paper was participated in by Messrs. Thos. D. West, of Sharpesville, Pa.; S. Groves, of Pittsburgh; John W. Diven, of Baltimore; R. M. Dyer, of Chicago; C. S. Bell, of Hillsboro, Ohio, and Benj. D. Fuller, of Pittsburgh

WEDNESDAY AFTERNOON.

The trip on Wednesday afternoon was one of the most memorable which has ever been taken by those in attendance at any convention. The visitors were taken by special train provided by the Westinghouse Company, first of all to the air-brake plant at Wilmerding, and then to the Westinghouse Machine Company at East Pittsburgh.

The foudry of the air-brake plant was first inspected, and the very original method of handling the work, which was fully described in The Foundry of December, 1897, surprised all those who had never seen it before. The fact that much, if not all, of the work made here is duplicated over and over again has made it possible to inaugurate original methods, and as a result much of it is done by machinery.

There are four large cupolas, one always being kept in reserve, and the other three being used all day. Their works are kept running continuously, night as well as day, the laborers working three shifts of eight hours each, one of the cupolas being worked for each shift.

After making their investigation of the foundry, the visitors passed on through the brass foundry and other departments of the air-brake works, and were given every opportunity to inspect in the fullest detail all the many operations in the manufacture of air-brakes in one of the largest manufacturing establishments in the world, and where all of these processes are systematized to a nicety; in fact, one of the chief features of the visit to this plant, and the one which impressed itself upon the minds of those who had an opportunity to visit it, is the amount of ingenuity displayed in this direction.

After leaving Wilmerding the party proceeded to East Pittsburgh, the locomotive running on the track between the two places and drawing the regular cars of the Pennsylvania Railroad Company, being operated by electricity.

In the foundry here the work is also systematized to quite an extent, and has be-

come quite remarkable for some of its methods of making engine cylinders, and for the complex character of the work made and turned out in green sand. Much of the success of the systems and work done at East Pittsburgh is attributed to the skill and in-

PHILIP MATHES,
CHAIRMAN OF REFRESHMENT COMMITTEE.

genuity of the late H. H. Garrett, their foundry superintendent. While visiting these works at East Pittsburgh a very delightful lunch was served, and thoroughly enjoyed.

RECEPTION WEDNESDAY EVENING.

One of the pleasantest events of this or any previous meeting was the reception held at the Hotel Schenley in the evening, where a varied and excellent musical program had been prepared. Refreshments were served, and everybody enjoyd himslf to the limit.

THURSDAY MORNING SESSION.

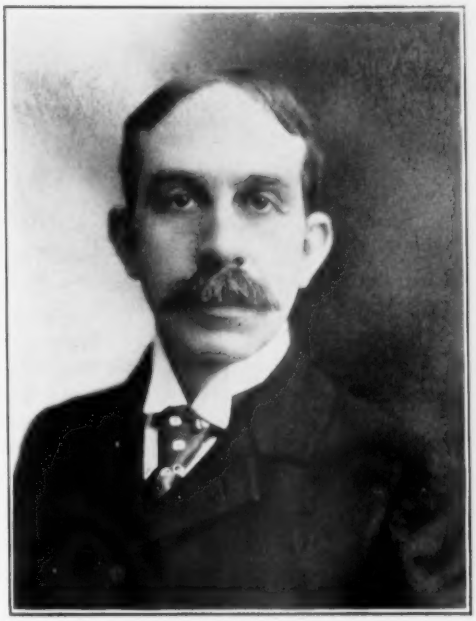
The final session of the Association was held Thursday morning. The papers read were "The Utility of Chemically Standardized Iron Samples," by Prof. Albert W. Smith, of the Case School of Applied Science, at Cleveland; "The Advantages of an Upper Floor Foundry for Light Castings," and "An Improved Method of Setting Up Brass Furnaces," by Eli Millett, of Springfield, Mass., and "The Deceptive Fracture of Pig Iron," by Thos. D. West.

A. W. Walker, of Boston, described the furnaces in use in the Walker & Pratt Manufacturing Company's foundry, and C. J. Wolff, of Chicago, in reply to an inquiry of S. T. Johnston, stated that in their foundry they had found forced draught preferable to natural draught, and that very much better results were obtained than when the former method was used in brass furnaces.

A letter was read from Vice-President Joseph Best, of Montreal, Canada, regretting his inability to be present, and expressed the wish that this convention would be as successful as its predecessors.

COMMITTEE ON NOMINATIONS MAKE THEIR REPORT.

The convention was closed by the reading and discussing of the report of the Committee on Nominations of Officers. The Chairman, Mr. W. A. Jones, of the Committee on Nominations, reported as follows:



E. A. KEBLER,
CHAIRMAN OF RECEPTION COMMITTEE.

For President—Mr. J. S. Seaman, Seaman, Sleeth & Co., Pittsburgh.

For Secretary—Mr. John A. Penton, Detroit.

For Treasurer—Mr. Howard Evans, J. W. Paxson, Co., Philadelphia, Pa.

For Vice-Presidents—New England States: Mr. A. W. Walker, Walker & Pratt Mfg. Co.,

Boston. Middle States—Dr. Richard Moldenke, McConway & Torley Co., Pittsburgh; Southern States—Mr. J. P. Golden, Golden's Foundry and Machine Co., Columbus, Ohio; Central Western States—Mr. C. A. Bauer, Warder, Bushnell & Glessner Co., Springfield, Ohio; Northwestern States—Mr. W. A. Jones, W. A. Jones Foundry and Machine Co., Chicago, Ill.; Southwestern States—Mr. W. S. Mosher, Mosher Mfg. Co., Dallas, Tex. Pacific States—Mr. R. Chartrey, Vice-President Joshua Hendy Machine Works, San Francisco, Cal.; Canada—Mr. Joseph Best, Warden King & Son, Montreal, Que.

J. S. SEAMAN ASSUMES THE GAVEL AND MAKES SUITABLE ACKNOWLEDGMENT.

Chairman J. S. Seaman then came forward, and made a very appropriate address. James A. Beckett made a very excellent and eloquent speech, congratulating the Pittsburgh foundrymen upon their magnificent entertainment, and concluded with a motion thanking them all on behalf of the American Foundrymen's Association for what they had done.

There being no further business, the third annual convention came to a close.

Convention Notes.

Uehling's method of casting and conveying metals, as used in several blast furnace plants, attracted considerable attention.

H. S. Vrooman, of Chicago, showed his enterprise by the display he made of a new form of fire-brick, especially adapted for malleable iron furnaces.

The ladies in attendance were never better entertained than in Pittsburgh, and they were unanimous in their praise of the splendid work of the Entertainment Committee.

Something in the way of molding machines was shown by Chas. Herman & Sons, of Allegheny. This machine possesses some unusual features and is especially suitable for small castings.

W. C. Swift, representative of Henry E. Pridmore, of Chicago, exhibited photographs of their specialties and the kind of work they are successfully turning out by their machines in all parts of the country.

The Carborundum Co., Niagara Falls, N. Y., exhibited samples of their material, which were, of course, interesting to foundrymen, who are among the chief users of grinding and polishing wheels.

Wm. Yagle made an ideal chairman for the Executive Committee, and introduced the different speakers and started the machinery of the convention going at the commencement in a very successful manner.

Howard Evans was greatly missed. He has been very sick for over a year and unable to attend to his business during a large portion of that time, and no one regretted more than himself his inability to be present.

Mr. J. G. Sadlier has taken an active part in the last three conventions, and as long as he is in the foundry business Mr. Sadlier can be found taking his annual vacation just about the same time these conventions are being held.

The festivities of the convention wound up with a smoker held in the main dining hall of the Monongahela House. This, like everything else our friends in Pittsburgh undertook, was a splendid affair and thoroughly enjoyed by all.

The S. Obermayer Co., as usual, contributed their share to the general entertainment, and room 9 of the Monongahela House was always pretty comfortably filled with their friends, S. T. Johnston, of Chicago, being in charge.

Mr. E. A. Kebler was chairman of the Reception Committee, and the representative of this paper thinks he was the first man he met in Pittsburgh and one of the last to say good-bye to when leaving, and it would seem to us that he was on deck every moment of the time between.

The Iron Age was represented as usual, and as we hope it will always be, by Geo. W. Cope, assisted by Mr. R. A. Walker, of Pittsburgh. The Iron Trade Review was represented by Mr. A. I. Findley, whose name is becoming synonymous with that of his paper, and who did the honors for it in his usual style.

No one can ever fully realize how much the Foundrymen's Association of this country are indebted to the different trade journals. For many years they have willingly given of their space to further the interests of these Associations in every way possible.

As chairman of the Transportation Committee, F. H. Zimmers was a great success. He omitted, however, to see that precautions

were taken to prevent the river from rising, and the trip by boat to Homestead was not feasible and the street cars had to be taken instead. If Mr. Zimmers had thought of it, however, he would have taken some steps to prevent the water from rising.

Dr. R. G. G. Moldenke made a motion just before the meeting adjourned that Mr. C. S. Bell, retiring President, be made an honorary member. This was following a precedent established in the case of President Schumann, who served for two terms. Mr. Bell made an ideal presiding officer; has always been a central figure at the meetings of the Association, and has hosts of friends.

It seemed almost too bad that just on the eve of the convention J. S. McCormick, dealer in foundry equipment and supplies in Pittsburgh, should be taken seriously ill and be unable to attend any of the sessions. His many friends who went there expecting to see him were naturally greatly disappointed, and The Foundry extends its sympathies, as we know he would have enjoyed the occasion.

A principal feature of the entire convention, of course, was the entertainment, and Mr. I. W. Frank is guilty of being chairman of that committee. The Foundry takes pleasure in recommending him to foundrymen in other localities who may contemplate entertaining the Association at any time, and if his services can be secured, no one else ought to be permitted to attempt the undertaking.

Dr. Wm. Phillips was chairman of the Press Committee, and no doubt very much of the general excellence of the press reports appearing in Pittsburgh and other papers, was entirely due to his efforts and ability. As a newspaper man of experience, the doctor, as well as having a practical knowledge of foundry matters, was able to bring to bear considerable influence of a very valuable character.

In sharp contrast with the exhibit in another part of the hotel of ornamental iron castings, was an old wood stove cast in 1779 by Wm. and Samuel Moore, and exhibited by S. P. Halk, of Pittsburgh. In addition to this, they had a side plate of a smaller stove cast in 1772 by Daniel and Samuel Hughes, at Antietam Furnace, somewhat the worse for wear, and a curious specimen of the bronze foundry art made in Japan, by H. K. Porter.

Mr. E. W. Anthony, of Smith & Anthony Co., Boston, is a large stove manufacturer, who, besides attending the convention of his own Association in Cincinnati a week before, found plenty to interest him at the meeting of the A. F. A. The exhibit of ornamental cast iron seemed to specially attract him, and he assisted materially in adding to the effectiveness of the exhibit by his work in supervising the way in which it was displayed.

Elsewhere in this issue we have referred to the good work done by the Committee on Badges, Registration and Printing of the Daily Bulletin, but that does not necessarily prevent our saying again a few words complimentary of the successful way this was handled by Mr. Robert Taylor and his assistants. It is one of the most trying and laborious tasks in connection with a convention, but it has never hitherto been done as well as by Mr. Taylor.

Dr. Moldenke exhibited in a glass case samples of green sand and dry sand test bars, such as were used in preparing some of the papers read at the meeting. Bars from Cast A were made by Thos. D. West; from Cast B by Jos. S. McDonald, of the Westinghouse Company, and from Cast C by the same parties. Some of these were as much as 4 inches square, and were quite interesting as showing the difference in fracture, and, taken in connection with the papers read, added very much to the value and interest.

The Foundry is afraid it has slipped a cog somewhere, but it is not sure on what committee Mr. Howard M. Hooker, of Rogers, Brown & Warner, served. The only way we can think of to solve the conundrum is to say that he served on all committees, as he seemed to be everywhere at the right time, and was always on hand to lend his valuable assistance in forwarding the work of the different committees in charge. Mr. Hooker made quite a few friends during the meetings, all of whom can be relied upon to remember his efforts in their behalf.

Mr. Philip Matthes was chairman of the Refreshment Committee, and a whole lot of people who attended the convention will never forget those refreshments. They were

of the best quality and quantity, and at the excursion to Wilmerding and East Pittsburgh they were served just at the right time. They formed a pleasant surprise at Calhoun Park, and if this committee had anything to do with the refreshments served at the Schenley Hotel, we can only say that they are a lot of professional caterers, all stars, and not a back number in the lot.

Mr. S. D. Sleeth, chairman of the Excursion Committee, when at home and attending to business is superintendent of the foundry of the Westinghouse Air-brake Co., at Wilmerding. It must be in that capacity that his genius for handling good-sized problems was developed. Every one who went to Pittsburgh knows all about those excursions, and now that they know who was responsible in a large measure for their success, they will entertain more kindly feelings than ever before for the superintendent of the Westinghouse Air-brake Co.'s foundry.

It is not definitely settled yet where the convention for 1900 will go, that being a matter that has generally been left to the Executive Board. It is understood, however, that a pressing invitation was on hand from Chicago, and, although not officially presented, owing to an oversight, it was there just the same, and the Chicago foundrymen did plenty of good work for their cause by talking the matter up. There was also some talk of the convention going to Boston next year, but nothing of a definite character was broached by the delegation from the New England States.

This is the first time that Mr. F. B. Farnsworth, of the McLagon Foundry Co. of New Haven, and incidentally mayor of that famous city, ever attended a convention, but if Mr. Farnsworth himself can be believed it won't be the last. It is a question whether New Haven has been rendered more famouse because of its having Yale University located there or because the University has been honored by being located in New Haven, but there is no question but they are both honored by having F. B. Farnsworth to keep both the city and the University in order.

The paper read by Mr. W. J. Keep on the subject of handling raw material at the works of the Michigan Stove Company at Detroit, was very interesting, but it would have been more so had it been set apart and read by itself, as, following right after the magnificent paper of Mr. A. W. Walker, it was rather crowded for time. His having previously printed it and having it distributed, however, partly compensated for this, and the foundrymen generally have since been given an opportunity of reading it in the columns of the different trade journals. It indicated very plainly that Mr. Keep has not given all his time during the past few years to the subject of "Keep's Test," but has been able to successfully develop economical appliances in other directions.

Probably the number of people in the entire world who have gone exhaustively into the subject of cast iron can be counted on

DR. R. G. G. MOLDENKE.

one's fingers, and in that list the name of "Moldenke" must always remain standing out prominently as a star of the first magnitude. No committee ever took up a matter promising so little; no committee ever worked more zealously; no committee ever presented facts, figures and data that the future will show to have been of such inestimable value on this all-important subject as the committee appointed at the Cincinnati meeting, and of which Dr. Moldenke was chairman, to consider and report upon standardizing the testing of cast iron. The beauty of it is, the rest of the members of that committee are willing to concede that the great

bulk of the work was done by the doctor himself, and that being the case, it gives THE FOUNDRY much pleasure to add its mite and to express the wish that in some way or other his unparalleled labors and indefatigable industry may eventually be appreciated as they should be.

The convention badges were this year unusually unique and very attractive. They were of white metal, keystone shape, suitably inscribed and bearing on the face a

good reproduction of a cupola. The illustration given herewith is a very good one and enables our readers to form an excellent idea of what the badge looked like.

The convention did a wise, graceful and good thing in selecting Mr. J. S. Seaman as President of this Association for the coming year. It is a neat appreciation of the work of the Pittsburgh foundrymen, and did more than anything else to prove how much every one was pleased with the entertainment. The Committee on Nominations are to be congratulated upon their wisdom in this selection. Mr. Seaman is well and favorably known in many parts of the country; was Treasurer of the Executive Committee; stands very high in the estimation of those who know him, and especially among his coworkers in the Pittsburgh Foundrymen's Association, and The Foundry believes he will give the American Foundrymen's Association during the coming year one of the best administrations it has ever had.

One of the general attractions of the meeting was an exhibit of ornamental cast iron work belonging to one of the officers of the Association, imported from Europe for the express purpose of exhibiting it at this meeting. For sharpness of outline and clearness of detail, the castings, which were of an ornamental character, and included placques, plates, statues, figures, jewel boxes, etc., were ahead of anything ever seen in this country. A good deal of work of a similar character was shown at the World's Fair, but those who had seen both exhibits were greatly surprised at the display in Pittsburgh. Some of the plates were fully three feet in diameter and were almost absolutely correct in outline and finish. A large number of the pieces were reproductions of originals well known in history. The jewel boxes were reproductions of some of those in the Tuilleries collection, the originals being in gold, silver, etc., while the plates and placques were chiefly of German design, many of them being of allegorical significance, or containing as centre pieces designs made famous as reproductions and paintings taken from tales of Grecian mythology.

In addition to this collection, the Yale & Towne Mfg. Co., Stamford, Conn., showed a few nice pieces. The Magee Furnace Co., Boston, displayed the largest number of pieces of cast iron work, one especially worthy of mention being a small plate which contained in a space six inches square the Declaration of Independence and the signatures of the signers. Naturally this was in fine type, but yet so clear and distinct that a person with good eyesight could read it. This piece, together with an ornamental placque shown by the American Radiator Co., carried off the honors so far as American work was concerned, and demonstrated quite clearly that if American foundrymen and American mechanics were to set their minds to it, there is no good reason why they should not make fully as creditable a showing as their brothers in foreign countries.

In addition to the parties named, F. & L. Kahn Bros., Hamilton, Ohio, displayed two or three nice pieces. The Michigan Stove Co., Detroit, and the Chicago Hardware Co.,

Chicago, also contributed to the success of the occasion.

Due credit should be given the committee in charge at Pittsburg for having been instrumental in securing the exhibit of ornamental castings, etc., and for their liberality in providing the room for exhibition purposes, as well as paying expenses of transportation, etc.

The Talk of the Town.

THE FOUNDRYMEN'S CONVENTION.

Here again we're giving welcome
To convention delegates;
This time foundrymen we're greeting,
And they come from many States.
Other men oft mold opinions,
And soon sadly see them pass;
But these visitors are molding
Theirs in iron, bronze and brass.

High they rank in estimation,
For they're model business men,
Though about them they're oft casting
Things they may not see again.
For their energetic methods
They are all deserving thanks,
Though it must be here admitted
That they're careful of their "shanks."

Though they may not go to battle,
Where the cannon flash and roar,
Every day they're plainly showing
They have grit right to the core
And as that may be expression
Some don't fully understand,
It is clearer made by saying
That they all have lots of sand.

But although so much they're knowing,
They admit there's more to learn;
Therefore, to the Iron City
Their attention they now turn.
New ideas they are seeking
In the foundry, mill and shop,
And they yearly hold conventions
Where ideas they can swap.

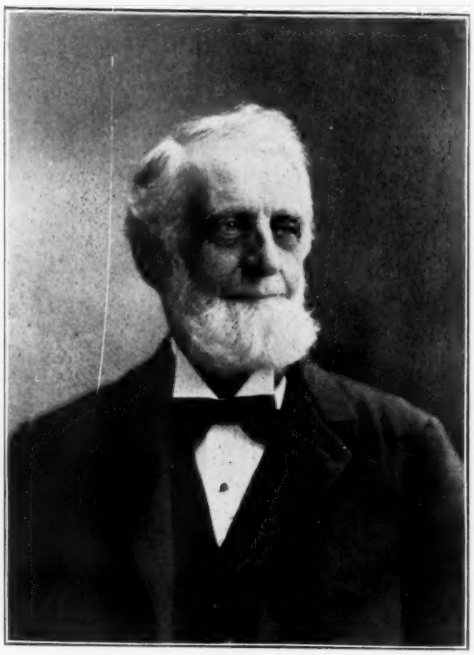
So the foundrymen we welcome
To the home of Father Pitt,
Where the workers in all metals
Have so often made a hit.
They'll be shown the city's wonders,
All the sights of world-wide fame,
And perhaps they'll go home wiser
Than when to this town they came.

—Pittsburgh Paper.

Obituary.

Lucius M. Pitkin, notice of whose tragic death appeared in this column last month, was a man of very high standing in the business circles of Cleveland.

No man in Cleveland was more thoroughly respected than Mr. Pitkin. He was of New England ancestry, and born on May 17, 1825, the oldest of ten children of Dudley Pitkin, of Marshfield, Washington county, Vt. The American head of the family in the person of William Pitkin, of London, Eng., came to the United States in 1659, settling in Hartford, Conn. Since that year members of the family have been United States Sen-



LUCIUS M. PITKIN,

ators, members of Congress, State Senators, Attorney Generals, and judges of Supreme Courts, and have been conspicuous clergymen, attorneys, physicians and literary men. They have been educated men, always. Mr. Pitkin received at the hands of his father a combined business and scholastic education at Burlington, Vt., and elsewhere, and at the age of twenty-eight years came to Cleveland. In 1868 he organized the Cleveland Malleable Iron Company, and in 1870 became interested in the Variety Iron Works Company. Since then he was its treasurer, and later its president.

Mr. Pitkin was a Christian gentleman,

treasurer and trustee of Plymouth Congregational church, and "was its constant friend and helper." He was nearly 74 years old. He had just been playing with his daughter's children, in good health and spirits, and was on his way to the station at Coits, to go to his business in Cleveland, and was seen crossing the Lake Shore track, in an attitude of apparent mental abstraction, when the engine struck him, throwing his lifeless body a distance of many feet.

He was never sick, but on the contrary was of a robust physique, always at work throughout a long and useful life. He was genial, kind and generous, and his demise is a cause of genuine sorrow to many besides the members of his family.

Working Under Difficulties.

BY ELI H. PEARCE.

It would be interesting for a foundryman accustomed to working in large foundries where all needed appliances are at hand, and where specialists are employed in all capacities, to go into a small country jobbing shop where the one molder employed is called upon to act as jack-of-all-trades, and has to mold, make cores, make ready the cupola, charge the stock, tap out, pour, etc., etc.

Many a good molder knows very little about melting iron, and it frequently happens that just such a man is called upon to run one of these little foundries, and such was the case at a shop that I visited recently.

When he tapped out, the stream of iron fairly shot from the tap-hole, and such was the shape of the "breast" that it was impossible to stop up while the iron was running, and so, all in excess of enough to fill the ladle was permitted to run over onto the floor!

I observed that the tap-hole was of even diameter flush to the front, and I suggested to the molder that if he would make it funnel-shaped next time he would be able to make the stopping bods stay in place.

Upon my asking him why the iron came out with such force, he replied that it melted fast. I happened to be there when he was making the bottom of the cupola for the next heat, and found that he made the sand bottom 8 inches deep at the back and 4 inches at the front, which gave a fall of 4″ in 20″, the latter being the inside diameter of cupola, which of course sufficiently accounted for his difficulty. I thereupon asked him to let me shape the bottom for him, and he freely consenting, I reduced the height at the back to about 4½″, which gave a gentle slope, with the result that no difficulty was experienced in taking care of the iron or in stopping up when the ladle was filled.

He came to me after the heat and asked me why it was that, though he might put all pig iron into the charge, yet the castings would be so hard as to cause the machinists to kick. I informed him that in order to please the machinists he must make his castings as soft as soap, without a particle of scale, use facing so strong that every grain of sand would peel off, and by no means to permit the least imperfection, for, in the machinist we have a perfect man, one who never makes mistakes, and who can always tell a molder just what is the matter with a bad casting—after the molder has found out all about it himself!

But this is wide of my present purpose. I agreed to help him to solve the cause of his hard castings, and when I shall have satisfied myself on this point you may hear from me again.

Trouble With a Piston.

Editor Foundry:—I have read with interest Mr. L. C. Jewett's article on the above topic in the February FOUNDRY, and, responding to his request for the opinions of others, I submit the following:

While examining the various figures and the modus operandi pertaining to the subject, I was led to the conclusion that the solution of the problem might be found in my articles on "Feeding," in the December and January numbers of THE FOUNDRY; especially in divisions 1 and 2, and in Fig. 1 of the December issue, and in division 4 of the January issue. And, in order to avoid repetition, so far as possible, I will endeavor to confine myself at this time to features not hitherto discussed.

The piston under consideration is 26 inches diameter, having an average thickness of 1¼ inches, the internal core forming 8 brackets, top and bottom. Referring to Mr. Jewett's article, on page 251, February issue, A, Fig. 2, suggests a core as a certain cure for the spongy spot, as shown at A, Fig. 1. Although this would add some-

what to the cost in the foundry, yet there can be no doubt of its remedial efficacy.

I perfectly agree with the chemist, that the trouble is due to shrinkage; and, no matter what the brand of iron used, the vacuum holes complained of would still appear, and the more dense the iron, the larger those cavities would be. It seems strange to me that Mr. Jewett should ascribe the trouble to inadequate venting, since nowhere in his article is there any reference to the appearance of blow-holes, and no defect appears to the eye till after turning, when the cavities are discovered. The cause of the shrinkage is, in my opinion, ascribable to the presence of the internal brackets; and, since the brackets are indispensable, the trouble must be overcome either by coreing the groove, or by feeding, and the use of the pumping rod.

The material of which the core is composed can have no influence upon the compression of the metal, but it may facilitate or retard the shrinkage, and, where it is so nearly surrounded with metal as in this case it should be composed of a substance that is very porous, and easily destructible, to facilitate venting and compression.—Wm. Roxborough.

Who Will Answer These Questions?

I have need for the use of white or antifriction metals for various purposes; among others for taking the weight of piston heads in steam cylinders. In this case the white metal would work against the wall of the cylinder, and take the dead weight, and it would be subjected to the friction, which is generated, and to the steam heat which in many instances in this country is 200 lbs. to the square inch. Perhaps some of your readers will give me the formula of a metal, which will be close-grained, tough and capable of standing under the above service.

Again I have necessity for putting antifriction metal into glands, where the metal would be subjected to the travel of the piston rod, and the consequent friction, and against anything as from 30 lbs. to 250 lbs. of steam. It is possible that some of your many readers may know the ingredients of a metal, which will answer this purpose.

Twenty-five dollars for a lucky word. See J. D. Smith's ad.

How do You Melt Turnings?

A correspondent writes: "I would like to know if lathe turnings, cast iron, wrot iron and steel mixed, can be successfully melted in a cupola of 28 inches diameter, and how should the stock be charged?"

If we were going to try this, we would charge at the last end of a heat, after all the iron was melted out, in pretty large quantity, and in the proportion of about 25 per cent. steel and wrot, to 75 per cent. cast iron. After charging, we would cover it with coke, and melt with a light blast, pouring the product into pig beds. Next day the pigs could be broken and accurately graded; by fracture, if you are an expert foundryman; if not, you will have to secure a chemical analysis, or, better, use a little at a time of the product in iron that cannot be injured by it, taking a test of transverse strength, deflection and shrinkage, always.

If any of our readers would suggest a plan, our columns are open to them.

One of our correspondents writes as follows: "We are using a great many cores in our work, and while we are having good success in every other way, we have much difficulty in cleaning the core from some of the castings. How can we overcome this difficulty?"

Will not some of our readers write an answer for publication in THE FOUNDRY?

The foundrymen of Buffalo effected an organization on lines similar to those of the Philadelphia, Western and other associations, at a meeting at the Hotel Iroquois on the evening of June 2d. The following officers were elected: H. W. Wendt, of the Buffalo Forge Co., president; Lawrence Giather, of J. Ginther & Sons, vice-president; C. M. Farrar, of Farrar & Trefts and the East Buffalo Iron Works, treasurer; S. W. Spear, superintendent East Buffalo Iron Works, secretary.

The Clayton Air Compressor Works have issued their complete catalogue No. 10, a copy of which is before us. It is an attractive book, standard 6′ x9″ in size, filled with descriptions and illustrations of air compressor machinery and devices. Those contemplating the installation of a compressed air plant will find this book invaluable for the information it gives concerning this convenient and economical means of transmitting power.

of 4" in 20", the latter being the inside diam-

at A, Fig. 1. Although this would add some-

THE FOUNDRY

Published Monthly by

"The Foundry Publishing Co."

DETROIT, MICH.

JOHN A. PENTON - - - EDITOR AND MANAGER.
E. H. PUTNAM, - - - - ASSOCIATE EDITOR.

SUBSCRIPTION PRICE:

$1.00 a year in advance, postage prepaid in the United States, Canada and Mexico.
$1.75 a year to other countries, postage prepaid.
Single Copies, 15 Cents.

ADVERTISING RATES ARE PRINTED IN EACH ISSUE.

Space in advertising pages only is for sale.
We invite correspondence on subjects pertaining to any part of the foundry business.
Subscribers can have their mailing address changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify us at once.
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Entered at the Post Office at Detroit, Mich., as second-class matter.

Trade Outlook.

Variety is said to be the spice of life; yet there are important elements that pertain to industrial affairs in which the characteristic of sameness is in the highest degree desirable. These reflections have special reference to the condition of the foundry trade throughout the country. There is no abatement of the great activity that has marked this industry for many months past. On the contrary, the total of business continues to expand; old foundry buildings that have long been idle, and that nobody supposed would ever again be put to their wonted use, have been, and are still being, started into active operation, and many new foundries are being erected in all parts of the country. There is a sameness here that has characterized the trade for a long time past and bids fair to extend indefinitely into the future, that is pleasant to reflect upon. As might be expected during the transition period from the depths of business stagnation to the heights of prosperity, the path of the founder is not altogether smooth. In fact, there are a good many rough places in it. Chief among these is, perhaps, the difficulty in getting iron, even at the sky-scraping prices generally quoted, many founders paying a premium in order to secure a preference, by which means only they are able to get what they must have. The situation develops the fact that the foundry capacity of the country is very much greater than the capacity for supplying raw materials. But a short time ago it was common to hear expressions of regret that the construction of blast furnaces had been carried so far beyond the possible needs of trade; to-day, all, except the owners of existing furnaces, deeply regret the inadequacy of blast furnace capacity for the present need. The whole effective capacity throughout the world is now in use, and many plants, abandoned long ago as out of date and unavailable, are once more producing iron at a profit.

An idea of the current consumption and the possible supply of pig iron may be gotten from the following, taken from a report of Rogers, Brown & Co., based upon inquiries made by them in the large iron centers:

The general average of all the reports shows an expected increase in consumption for 1899 over 1898 of 35 per cent.

Furnace stocks and actual production during the past three years are shown in the important figures following:

Stocks April 1.		Weekly make for previous month reports April 1.	
1897	1,092,113	1897	177,187
1898	814,951	1898	235,279
1899	302,628	1899	243,179

The pig iron production of the United States, taking certain decades, becomes very interesting in a consideration of the present situation, as up to 1890 production about doubled every ten years:

Gross tons.		Gross tons.	
1859	750,559	1860	821,223
1869	1,711,285	1870	1,665,178
1879	2,741,852	1880	3,835,191
1889	7,603,638	1890	9,202,703

In 1898 production was 11,773,934 tons, and if "history repeats itself" 1899 should furnish 15,000,000 tons at least, which is altogether impracticable.

The indications are that the country has not made provision for the expanded business and extraordinary demand.

The probable increase to be realized this year over last in the blowing in of silent furnaces throughout the country, together with the few new ones yet to be completed, will add to the production of 1898 approximately 1,100,000 tons, so that this year's production

will probably reach 12,875,000 gross tons. If expectations of those planning to start furnaces are fully realized the year's output will go to 13,500,000 tons.

From this it would appear certain that demand will outrun supply for the remainder of the year at least.

Some consignments of iron for Europe have been held for home consumption by payment of a sufficient advance to make it more profitable to the consignee to part with than to use, the stock. Some of our founders have also found it more profitable to sell at a great advance than to use their pig iron in casting product.

The most remarkable feature of the foundry industry throughout this period of rising values has been the difficulty met with generally in raising the price of castings. At last, however, general prices have been moved upward to some extent, and it is probable that from now on they will bear a more consistent relation to the cost of pig iron.

There is complaint in some quarters of scarcity of molders, but this trouble will probably disappear upon settlement of the differences that have arisen between workmen and their employers, consequent upon the demand for higher wages than many employers have felt able to pay, at least until they should have finished the work contracted for on a basis of much lower cost of raw materials than now prevails.

There are just now, and have been for some time past, some pretty important strikes in progress, but, under the peculiar circumstances that now obtain, the effect of these for ill can be only local; for, when the supply of iron is very much short of the demand, any disturbance that does not cut down consumption below the possible supply of iron can hardly be said to be a general calamity; for the country at large cannot use any more iron than it can get, and the cutting off of consumption by strikes and lockouts in one section will have the effect merely of permitting a larger consumption elsewhere. This is peculiarly a time when the trade at large may laugh and grow fat while individuals are engaged in strife over the division of the proceeds of their industry: for the general trade will surely get the bone that the belligerents are fighting over.

Reverting to the question of blast furnace capacity, it may be stated that, if the advance in the price of pig iron would warrant the starting up of furnaces that have long stood idle because they could not be run at a profit under nominal market conditions, the lack of ore supply would defeat it, for some time to come at least. Viewing the question, therefore, from all standpoints, there is nothing to encourage the hope that the year's output will much exceed 13,000,000 tons.

Tremendous R. R. Smash-up.

It is not ordinarily within the province of a trade journal to take note of a railroad wreck, but there are features connected with the following case, in which 16,000 cars are involved, that may interest foundrymen particularly. We quote from the Detroit Free Press of May 4:

Under a recent negotiation the American Car & Foundry Co. came into possession of 13,000 of "dinky" coal cars belonging to the Lehigh Valley road and about 3,000 ordinary box cars owned by other railways. They were old, and new ones were required, and while the old cars had outlived their service they were still too staunch to fall apart, or even to be torn down except at considerable expense; and yet, in each car there is approximately two and a half tons of scrap—not counting wheels and axles—of the best grade. And it was the 40,000 tons of scrap that the Car & Foundry Co. had in view.

Accordingly, a lease of the triangular space of several acres just at the M. C. R. R. "Y" next south of the Michigan Carbon Works, in Delray, was obtained, and what has been dubbed "Henrion's Crematorium" has been established, giving employment to about 125 men. Here portable tracks have been provided, a derrick has been erected, shears for cutting cold iron, hydraulic presses for removing wheels from axles have been put in position, and, in brief, a novel wrecking plan has been put in commission for the purpose of getting, at the lowest possible cost, the thousands of tons of steel scrap, car scrap, axle scrap, brasses and wheels out of those cars.

At first it was the intention to turn the cars over to the Poles and such other people as might desire the privilege, giving them all the wood they might get for the tearing down of the cars. This plan was not successful, however, because it was soon discovered that the wreckers were taking more iron—worth from half a cent to one

cent a pound—than was desirable, and so the process of burning the cars was adopted.

Whenever possible, the superstructure or upper works of a car are lifted bodily from the trucks and swung over to the cremation pile. In the case of the coal cars this practice is not advisable. Accordingly a train of ten or fifteen cars is made up. Then a locomotive adjusts itself, without coupling, to this train, and with a good start the train is sent at great speed out on one of the portable tracks. When at its best headway the train is abandoned by the locomotive and the cars go pell-mell to their wreck heap, piling one on top of the other four and five deep. It is, while intentional, a veritable railway wreck and from that standpoint proves a very interesting process to railway engineers, firemen, conductors and brakemen. George Henrion, who has charge of the work, says they can destroy about 100 cars a day and that it will probably be November or December before the work is completed.

Molders as Sprinters.

Jas. W. Cratty and Rufus R. Morrison, molders in Noyes & Nutter's foundry, Bangor, Maine, ran a foot-race recently in which Cratty made a record that set the professional championship bee a-buzzing in his bonnet. It is said that the first heat was phenomenal, both sprinters reaching the tape in just 17 seconds. It is not stated how far "the tape" was from the starting place, but we take it for granted that both ends of the course were within the State of Maine. The Commercial, from which we take the report, says that they "ran 100 dashes." We suspect that this is a misprint, and that the reporter really meant to say that they ran 100 rods, or yards, or feet, or something of that kind. The special inducement to the participants was a purse which was made up by some of the public-spirited men of Bangor (a rumor to the effect that a portion of the money was contributed by outsiders being repudiated with scorn), amounting to, all told, one ($1.00) dollar, the full amount to go to the winner.

Some of Mr. Morrison's friends are much dissatisfied with the outcome of the event, believing, as they do, that he is capable of acquitting himself much more favorably than he did upon this occasion. Already there is talk of an endeavor to raise another purse, though it is held by some to be like "looking the gift horse in the mouth" to expect the community to go down into its pocket for another dollar (it has been suggested that the next purse be at least a dollar and twenty-five cents, the twenty-five cents to go to the loser), before it has had time to recover from the effects of the first gift. Doc Billswaggle pooh-poohs this idea, and says, "They hain't nothin' small 'bout Bangor, an' he'll head the list with ten cents hisself." So the race will probably be pulled off.

Make Hay While the Sun Shines.

The following is taken from the Lima, Ohio, Advertiser:

"The windows at the Lima Machine Works foundry in South Lima have been nailed up and the $50,000 the company paid yearly for wages will go to some other town. Two branches of the Lima Machine Works have been closed by reason of strikes in the last six months, and two hundred men lost their positions. It is to be hoped the trouble will not go any farther. Such disturbances are not doing Lima any good."

This is only one instance of some of the unfortunate phases of returning prosperity. We do not know anything about the merits of this case. It may be that the workmen were led by unwise men to make demands that could not be complied with, while, on the other hand, it is quite possible that the employers were unwilling to make reasonable concessions.

These are rather hilarious times in the iron industries, and heads that are not well balanced are liable in consequence to get "off," under the influence of the unusual excitement that prevails pretty generally. It is certain, however, that the foundry that cannot keep "in the swim" under existing conditions will melt no iron in the day of adversity which will surely follow all this hurly burly. Do not nail up your windows now; if the workmen, under the intoxication of the possession of power to command a share of the increased rewards of industry, use that power with a provoking disregard for the interests of their employers, remember that they are only human, and that they are doing just what everybody else is doing, namely, getting all they can for what they have to sell. There is a scarcity of pig iron and of molders, and it takes more money to buy either than formerly.

Amoozing.

It takes the common, everyday newspaper reporter to write the most intensely interesting article on foundry practice. The practical foundryman is so familiar with every detail of foundry operations that the whole business is to him extremely commonplace, and so, naturally, he lacks the exuberant enthusiasm that seems always to possess the reporter as soon as he gets into a foundry. The average reporter is about "as bright as they make them," when dealing with questions that pertain to general society; but when he essays to tell "what he saw in a foundry," it is then that he rises to his supreme stature as a purveyor of news. What he writes is, no doubt, entirely news to the general public, and a great deal of it is news to the foundryman.

A reporter visited a stove foundry in Portland, Maine, the other day, and wrote a two-column article about it for his paper, accompanying it with a generous sized cut of a section of the foundry with the cupola in operation. It makes a foundryman uncomfortable to look at this picture. The flasks are evidently made of either steel bridge angle irons or 16-in. x 16-in. timbers! One man is catching iron in a hand ladle; another, standing about four feet away, intends to follow, while three other men stand at a distance, with empty hands, apparently disinterested spectators, and there is nobody there to "stop up" after those two hand ladles! As if this were not enough, the artist has connected the wind pipes to each side of the cupola spout! The cupola is probably suspended to the roof, for it has no legs or other support from below.

Speaking of the process of molding, the reporter says: "The pattern is laid upon the sand and leaves an impression there so accurate that it looks as if carved in marble. The man who is making the casting pours a little water here and there and dusts the sand over with lampblack; two things which are necessary to make the casting successful!" But when the reporter leaves the realm of technics and settles down to the portrayal of generalities, he shows the real mettle of his make-up, and it's pretty good mettle, too. He says:

"Without meaning any disrespect to the men who pour the iron, it may be said that the scene in the half-lighted room where fire is running about like water and is being poured here and there by the workers whose faces are black with the dust strikingly suggests the orthodox idea of the regions in the world beneath. Portland people pay a dollar and a half for a seat at the theater and marvel at the realistic scene with its red fire and lightning when Faust views the Brocken. Every working day in the year there are much more exciting scenes in Portland in which fire plays a principal part and men handle it as the milkman handles milk. The ordinary iron foundry will make stage realism seem tame and commonplace."

The "Chester Times," of Chester, Pa., commenting upon the late Pittsburg convention, says, in part: "It was a great gathering of men interested in the iron industry. The representatives from all parts of the State reported that business was good and all wanted more men than they had. This is the best evidence of improvement in trade, for at the last meeting there was a very gloomy outlook for the members of the association. Many of them at that time thought they would have to go to the wall, but now they are full of hope and happy." This characterizes the situation pretty accurately. The last meeting of the American Foundrymen's Association was at Cincinnati last June, and at that time the outlook for profitable business was indeed rather gloomy. There had been general complaint from men in all kinds of business that there was little or no profit on the small amount of business that was doing, and this complaint applied to conditions running back for a number of years; prices were lower than had ever before been known, and yet people seemed unable to buy enough to keep the wheels of industry in motion. Now, prices have advanced from 10 to 100 per cent, and we seem to be able to buy more than the whole country can produce; the question is, where does the money come from? And the answer is, it is not money that does it; it is simply a matter of production and exchange of product. Why should not a people at all times produce to the fullest capacity and enjoy the results of their thriving industry? This is a question not so easily answered. There are those who believe that nothing but ignorance stands in the way of perpetual prosperity of a degree much higher than that of which we boast to-day. Not ignorance on the part of the wage classes, but in the men who are

at the head of industrial affairs. Not, of course, general ignorance, but specific; ignorance of the true law of distribution, whereby demand may be made to balance with supply at all times.

According to the Milwaukee Sentinel of May 23rd, the Milwaukee Foundrymen's Association is opposed to the enforcement of the "smoke ordinance," on the ground that a successful device for consuming smoke has not yet been invented. The association is said to embrace within its membership all the foundrymen in Milwaukee and vicinity, and has for its object the discussion of subjects of interest to the business, disclaiming anything in the nature of an attempt to combine for the purpose of advancing prices. At a meeting held at the Plankinton House club room last evening the following was adopted, nearly all the foundries in this city being represented:

Whereas, The factories of Milwaukee in their ordinary operation emit more or less smoke, which smoke consumers will not prevent, the complicated and expensive devices of that kind proving failures and soon finding their way to the scrap pile, and the steam jet and forced draft devices being destructive to boilers; and

Whereas, The smoking factories, locomotives and steamboats of Milwaukee have been the chief factors in building up the city and are a source of livelihood of most of its inhabitants; and

Whereas, No complaint of smoke nuisance has been made excepting by mischief making newspapers; be it

Resolved, That the proposed arrest of manufacturers in the attempt to enforce a foolish and impractical smoke ordinance is unjust, unwise and uncalled for, and such action on the part of our city authorities will quickly result in great and permanent injury to the business interests of Milwaukee.

The Pneumatic Supply & Equipment Co. has been organized under the laws of the State of New York and has opened an office at 120 Liberty street, New York. It is the purpose of this company, as its name implies, to deal generally in compressed air equipment, and it will make a specialty of the installation of complete plants, eliminating the division of responsibility which has heretofore existed in the trade. The company is bringing out several specialties in the compressed air line, such as pneumatic oil rivet forges, quick acting hose couplings, and has in addition closed agencies for several standard types of compressors.

Mr. J. W. Duntley, the president of the Chicago Pneumatic Tool Co., is the president of the new company. Mr. E. B. Gallaher, formerly with Messrs. Patterson, Gottfried & Hunter, is the vice-president and engineer, and Mr. W. P. Pressinger, formerly manager of the Clayton Air Compressor Works, is secretary and treasurer.

The rapidly widening scope of compressed air application opens a large field of usefulness for the new company, and the character of its incorporators is an assurance of its ability to meet the requirements of the trade.

The Chicago Pneumatic Tool Co. has purchased the patents formerly owned by the Consolidated Pneumatic Tool Co., now defunct. These patents include all the Keller and Wolstencroft types of tool construction, and in addition several new applications which have not yet been taken out. These patents originally cost the Consolidated Pneumatic Tool Co. about forty thousand dollars ($40,000), and in purchasing them the Chicago Pneumatic Tool Co. acquires control of about all of the pneumatic tool patents of value in existence.

In the April issue of THE FOUNDRY, under the caption, "What About the Sabbath?" we adverted to the practice of some large manufacturing concerns of ignoring the Sabbath day. Anent this question the Providence (R. I.) Telegram says:

"The agitation started some time ago in Pittsburg by the Iron and Steel Workers' Association, in conjunction with the Federation of Churches, against Sunday labor in the great steel and iron mills of that city, still continues, and in all probability the mill owners will defer to public sentiment by abolishing Sunday work hereafter."

It is to be hoped that this prediction will prove true. It is quite probable that the mill owners themselves will be as highly pleased as anybody if it shall be possible to recede from this practice, which is simply a phase of the madness of modern competitive methods. There is no money in it; there is no sense in it; it is altogether outrageous, and it must, and will be, stopped.

About six weeks ago the price of Bessemer pig iron in Pittsburg was $15.00 per ton. A month later it was raised to $16.50, and a week later still to $17.65. In May, 1898, the price was $10.25 per ton. In view of the known fact that it will be impossible to supply the demand during the remainder of the year for this brand of iron, it is quite within the possibilities that it will reach a price of at least $20.00 before the end of the year.

The Globe Iron Foundry Company, Erie, Pa., has the contract for city castings, at 2¼ cents per lb.

Regarding a rumor lately circulated that the Pennsylvania Car Wheel Company (Pittsburg) had sold out, Mr. Charles V. Slocum, secretary and treasurer, writes us that it is erroneous, and he wishes us to state that their paid-in capital stock has been increased from $100,000 to $200,000.

In contracting for material to supply the various branches of the United States Iron Pipe and Foundry Company, the allotment of coke to the Addyston plant was four car loads per day. This amount of coke would melt, if it is all applied to that purpose, at least 288,000 pounds of iron a day.

Henry E. Pridmore, manufacturer of sand molding machines, informs us that he is now established in his new factory, southeast corner of Nineteenth and Rockwell streets, Chicago, where the facilities and equipment is double what it was at the old place. The machine shop is now running and the foundry is under process of construction. Their new catalogue, just published, will be sent free to any parties interested in molding machines.

It is reported that there is a prospect of a combination among manufacturers of foundry facings and supplies. The suggested capitalization is $2,000,000. The names mentioned in connection herewith are J. S. McCormick & Co., Pittsburg; S. Obermayer Co., Cincinnati; J. W. Paxson Co., Philadelphia; T. P. Kelley, New York; Buffalo Foundry Supply Co., Buffalo; Cleveland Facing Mills, Cleveland; J. D. Smith Foundry Supply Co., Cincinnati, and the Hill & Griffith Co., Cincinnati.

The Midvale Steel Company, at its Nicetown plant, is erecting seven bath houses, 15x38 feet each, equipped with bath tubs, shower baths, etc., for the use of its employes. This is a feature of competition that will be necessary in order to succeed in the not distant future. It is indeed the noblest form of competition, for it wins by kindness; it ennobles the benefactor and exalts and dignifies the beneficiary.

Lord Chesterfield himself could not have outdone Marshal Kittridge, of Bath, Maine, in the following circumstances, as reported by the "Independent:"

A middle-aged woman in town early this week in search of employment ascended the City Hall steps and said to Marshal Kittridge: "Is this Mr. Torrey's foundry?" "It isn't now," replied the Marshal politely, as he directed the woman to the Torrey Roller Bushing Works on Commercial street.

The Berlin Iron Bridge Company, East Berlin, Conn., recently gave the fourth annual oyster roast to its employes and their friends, 25,000 invitations having been issued, and 4,000 people being in attendance. There were oysters galore, and music and dancing. All sorts of people were there, from the bank president and industrial prince to the common laborer, and all joined heartily in the common cause of good fellowship. This company employs about 400 men at the works, and many outside on various contracts. They have booked $750,000 of orders since January 1.

The Case Manufacturing Co., of Columbus, O., advise us that they have recently placed in operation electric traveling cranes as follows: The Burgess Steel & Iron Works, Portsmouth, O., one 60-ton; American Steel Foundry Co., St. Louis, Mo., one 30-ton; The Alcania Co., Pittsburg, Pa., one 15-ton. Also, have put in operation hand power cranes as follows: Sanderson & Porter, New York City, one 10-ton; Wheeling & Elm Grove Railway, Wheeling, W. Va., two 6-ton; Robinson & Co., Richmond, Ind., one 3,000 lbs. They have just shipped to the Cumberland Steel & Tin Plate Co., Cumberland, Md., one 25-ton electric traveling crane; U. Baird Machinery Co., Pittsburg, two small cranes. They also have orders as

follows: Moran Bros.' Co., Seattle, Wash., one 25-ton electric traveling crane; Long & Allstatter Co., Hamilton, O., two 25-ton electric traveling cranes; Ferrell Foundry & Machine Co., Ansonia, Conn., one 15-ton electric traveling crane; Erie City Iron Works, Erie, Pa., one 25-ton electric traveling crane; L. Schreiber & Sons Co., Cincinnati, O., one 10-ton electric traveling crane; Missouri R. R. Co., St. Louis, Mo., two 75-ton electric traveling cranes; Canton Roll & Machine Co., Canton, O., one 15-ton electric traveling crane; Columbus Electric Co., Columbus, O., one 10-ton hand power traveling crane; the Crane Co., Chicago, Ill., one 4,000 lb. electric traveling crane; the Barstow Stove Co., Providence, R. I., one 3,000 lb. jib crane.

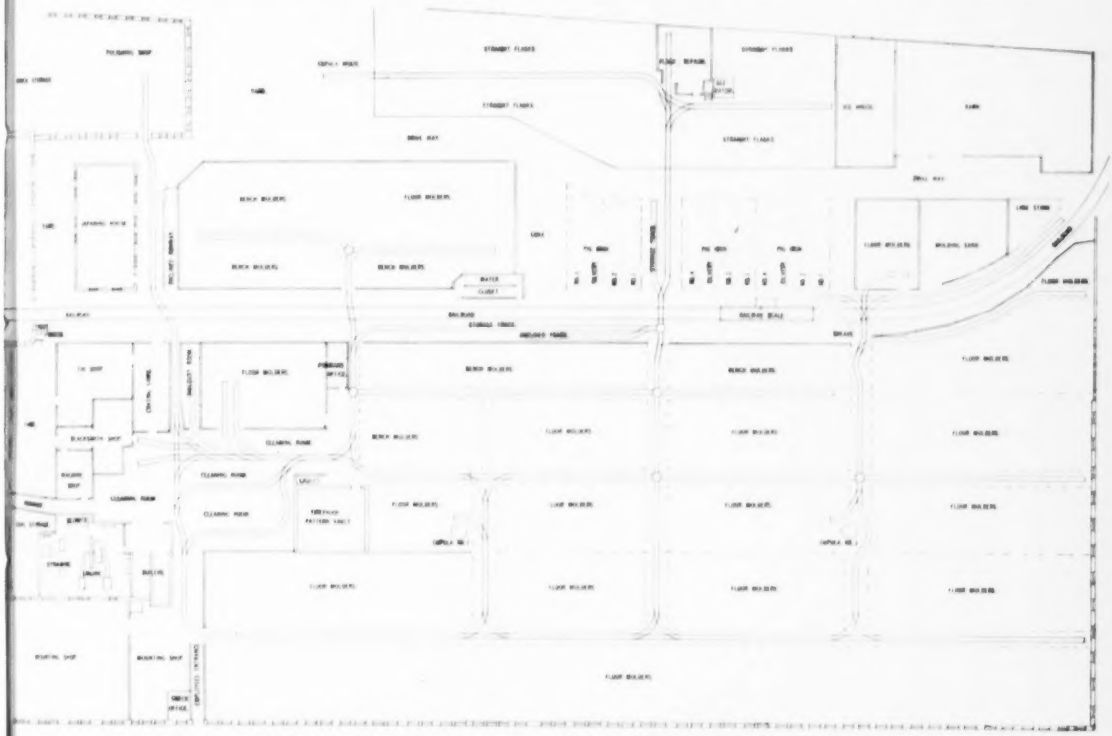

FIG. 2—PLAN OF INDUSTRIAL RAILWAY ON GROUND OF FOUNDRY.

Original Methods for Handling Materials at the Works of the Michigan Stove Company, at Detroit, Mich.*

By W. J. KEEP, Superintendent.

One of the results of a series of years of business depression is that those in charge of manufacturing will have time to devote close attention to each department and by improved methods of production partially compensate for decreased sales. With the advent of dull times in 1893, the Michigan Stove Company began to devise new methods for manufacture. Probably the only portion of these improvements that would interest the general founder would be the method of handling material and the management of cupolas.

The space available for storage of flasks, coke, iron and sand is very small, which was for years considered a disadvantage, but under the changed methods it is a positive advantage. Formerly all cupola supplies were wheeled to elevators and were hoisted to the platforms and unloaded, then when the cupolas were charged the materials were placed on scales and weighed and handled again in charging. While using elevators it was necessary to maintain inclined runways to be used in case of frequent derangement of elevators. It was found that wheelers would stop to rest about so often, and invariably would wait at bottom and top of the elevator for one reason or another, therefore when the elevators wore out they were not replaced and it was found cheaper to use the inclined ways exclusively.

* Paper read at the Pittsburg meeting (May, 1899) of the American Foundrymen's Association.

All of the melted iron is taken in hand-ladles holding 50 pounds, therefore there is no use for appliances for carrying melted iron. The railroad track on which all supplies are received is located between the iron yard and the foundry, making it necessary for all materials to cross the railroad track in going to the cupolas.

In common with other founders, it had been impossible to have melters charge materials as they reported them, causing each year a great shortage in both coke and iron when the amount purchased was taken into account, and it was a common experience to show more castings produced than pig iron melted.

Flasks had always been exposed to the weather, and could only be found by men who were familiar with their location, and who spent more time searching for flasks than in their transportation when found.

The carpenter shop was located a long distance from the flask yard, requiring that flasks should be wheeled to the shop, and when ready to use should be again wheeled to the foundry.

The subject of improvement of methods was under consideration for several years. At one time it seemed possible to adopt a trolley system, but difficulties appeared that finally led to the adoption of ground tracks with 20½ inch gauge, and curves with a 12-foot radius, and as few turntables as possible, requiring cars with flexible wheel base.

A traveling crane was erected to reach every part of the yard. With it all materials for cupolas were hoisted to a weigh house on the foundry roof and were then sent to the cupolas on a gravity road.

A two story building was erected to hold all flasks and the carpenter shop was located in its center, with an elevator reaching the roof and each floor.

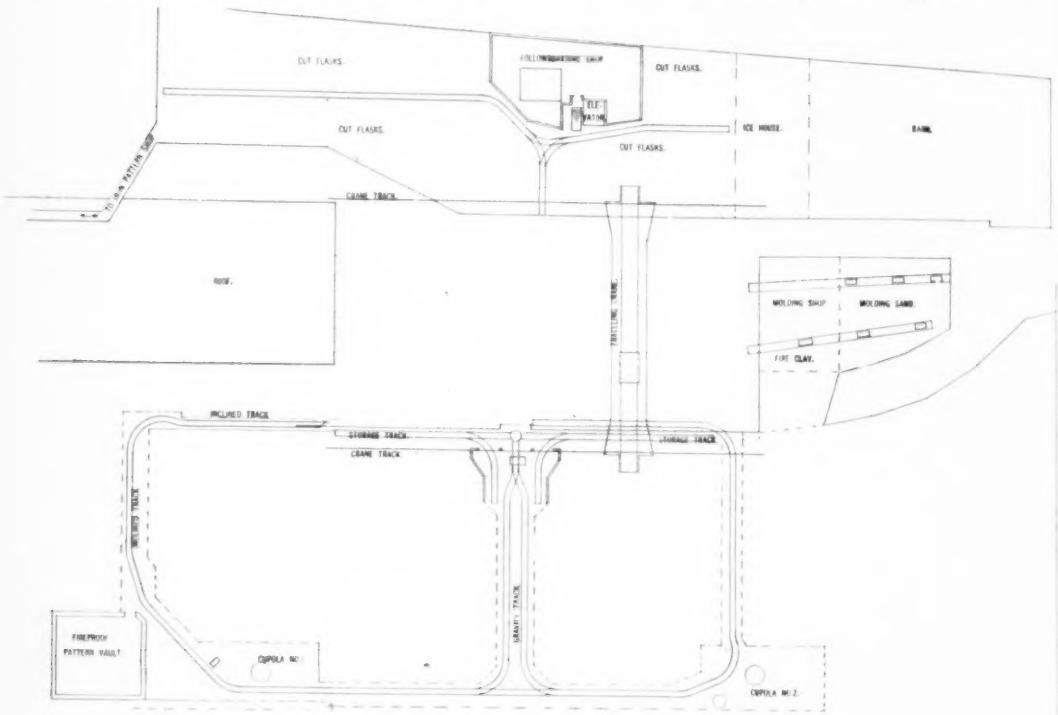

FIG. 3—PLAN OF INDUSTRIAL RAILWAY ON SECOND FLOOR.

Electricity was adopted for motive power. After submitting drawings for the general arrangement to several manufacturers of foundry appliances, it became apparent that many modifications would be necessary as the work progressed.

Contracts were therefore given for the whole of the work to a Detroit firm, the Russel Wheel and Foundry Company, who had begun the manufacture of industrial railways and cars, and who were willing to design a crane that would suit the requirements.

Fig. 2 is a ground plan of the foundry and buildings containing industrial railway, and shows curves, turntables, crossings of railroad and location of supplies and flask rails for the crane to travel upon. Flasks from the second story of the flask shed are run on cars to the end of the track, and are taken by the crane to the ground track.

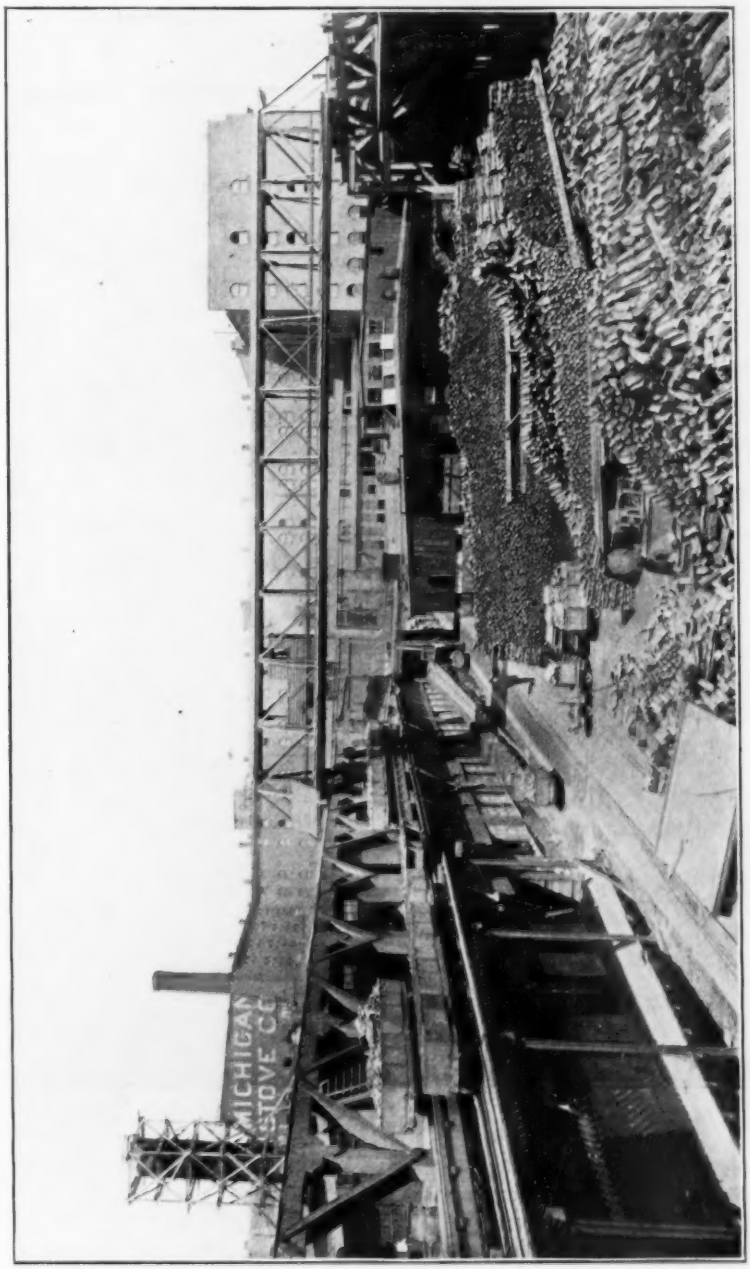

FIG. 4—REAR VIEW OF THE MICHIGAN STOVE COMPANY'S WORKS.

house. All together there are over three quarters of a mile of industrial railroad.

Fig. 3 shows all tracks located above the ground, and also shows the location of the

On the roof of the sand shed are tracks for dump cars which drop sand or fire clay into the space beneath.

On the edge of the foundry roof are tracks

for storage that curve into the weigh house. On one of these is stored cars, each of which contain three boxes of coke, and on the other track are stored cars each containing three boxes of sprues.

A car with pig iron is lifted from the iron yard to the weigh house, where the exact

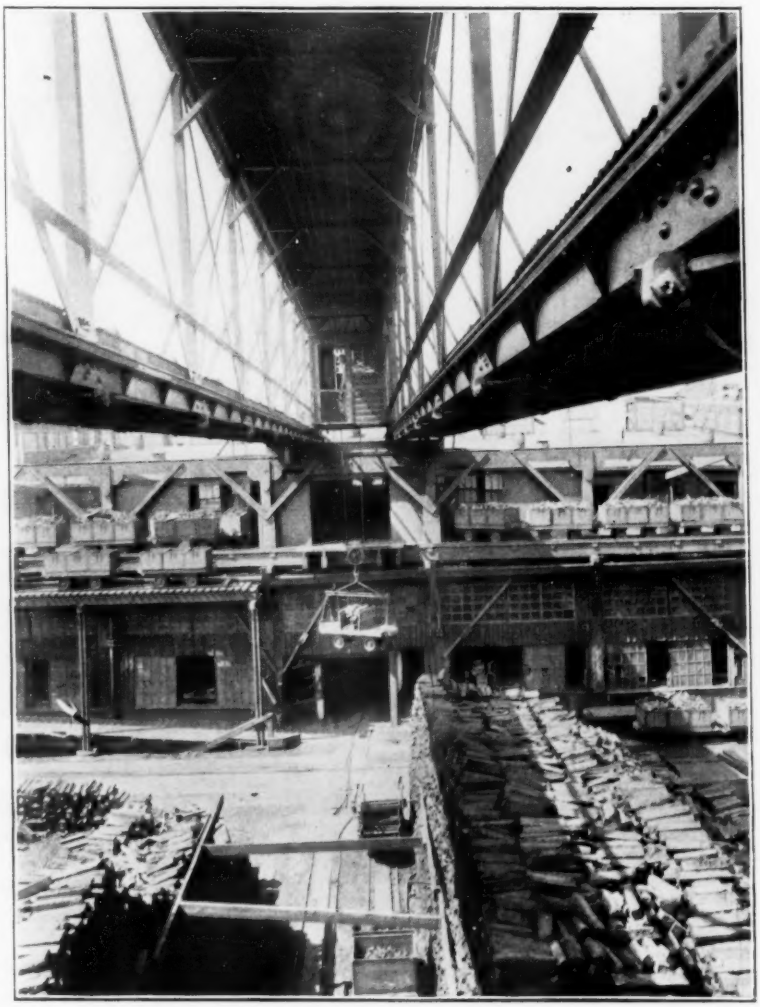

FIG. 5—FROM ROOF OF FLASK HOUSE UNDER CRANE.

amount of pig iron is weighed. By a swinging crane and a special lifting device a box of sprues is transferred to one end of the car and the correct weight put on, then a box containing the required amount of coke is placed on the other end of the car, the whole being one charge for a cupola. The car is then pushed on one of the gravity roads to one of the cupolas, and so on until the tracks between the scale and cupolas are filled with loaded cars. When the contents of the cars are charged into the cupola, the cars from No. 1 cupola are by a friction winch run down the track on the old incline to the yard, but the empty cars from No. 2 cupola are sent by a gravity track to a storage track near the weigh house. The first car each day contains limestone which is dumped on the platform near the cupola and shoveled in with each charge, about forty pounds being used to each ton of iron. After that car is a car of wood for lighting the fire, then three cars of coke for the bed, after this each car contains 1,300 pounds of pig iron mixed as ordered, 700 pounds of sprues

and 230 pounds of coke. When the last car containing a charge of iron is unloaded, cars containing iron from the dump and gangway sweepings are charged.

Fig. 4 is a general rear view, showing in the distance a rope drive 400 feet long transmitting 75 horse power. This was formerly exposed to the weather, but gives much better satisfaction since it is covered by a roof. This figure shows a general view of the crane, which is an ordinary bridge, without a floor, provided with lateral trusses to allow the cab which contains the hoisting machinery to run on the lower chords. The

Fig. 5 is a view of the under side of the crane, taken from the roof of the flask house. It shows the cab running on the lower chords of the bridge. It also shows all the bracing of the bridge. A car containing 1,300 pounds of pig iron is being hoisted to the weigh house, which is on the foundry roof, directly in front. On the right of the weigh house is the storage track for coke, which curves into the weigh house, and on the left is the storage track for sprues. Just in front of this and a little below it, is the storage track for empty cars that have been sent out from No. 2 cupola.

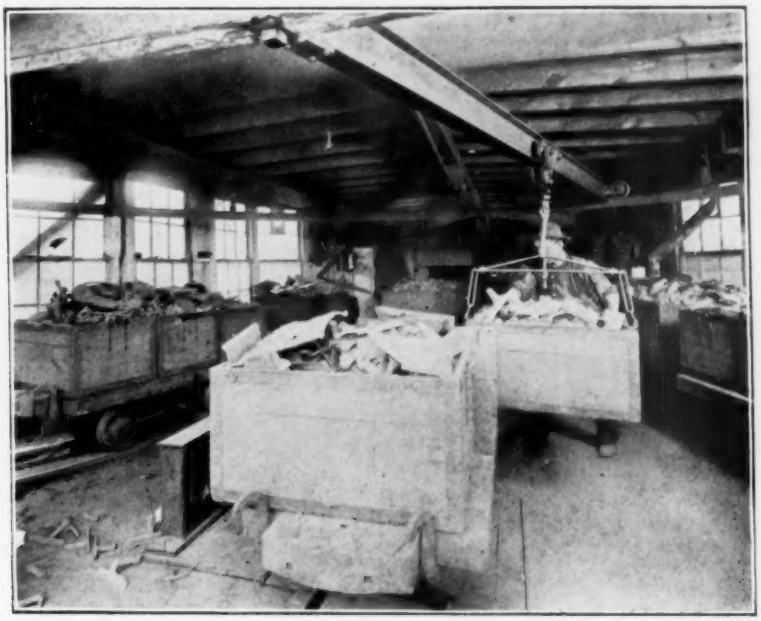

FIG. 6—MAKING UP CHARGES IN WEIGH HOUSE.

bottom of the cab is of plate glass, enabling the operator to see everything in the yard beneath him.

In the cab are three controllers for operating the crane. The length of the crane is ninety feet from one track to the other. Its capacity is three tons, the length of wheel base is fourteen feet, the speed of hoist is 50 feet per minute, of cab 100 feet, and of bridge 130 feet. The motor for hoisting is 6 H. P., that for moving the cab 12 H. P., and for moving the bridge 12 H. P.

The trestles for the bridge are pine, those on the foundry end are a part of the frame of the foundry, and on the other side form the frame of the flask house.

The crane in returning from a load can take back two empty cars. Beneath this track is the old incline for wheeling to No. 1 cupola, which is now occupied by an inclined track from No. 1 cupola, down which cars are lowered by a friction winch near the cupola. On the ground below this track is a storage track. Below the crane and leading from the entrance to the foundry floor is the track to the flask house, and on the right is a storage track on which is stored cupola cinders and sprues.

Fig. 6 is a view in the weigh house. A car of iron is on the scale. The scale is balanced with an empty car standing on it. The first beam weighs 1,000 pounds, the second beam weighs 355 pounds, the two

weighing the 1,300 pounds of pig iron, the 55 being for the sideboards. The next beam is set for 800 pounds, which weighs 700 pounds of sprues, 30 pounds of sand and 70 pounds for the box. The next beam is set for 300 pounds, 230 being coke and 70 pounds the box. The next beam is set at 810 pounds, out and the load is varied until the beam tips.

The car containing 1,300 pounds of pig iron is brought up by the crane and the weight made correct. A car with boxes of sprues stands on the left curved track, and a car of coke on the right track. The swing crane

FIG. 7—CHARGING No. 1 CUPOLA.

600 pounds of coke and 210 pounds for three boxes. The other beam is set at 540 pounds, 400 pounds of coke and 140 pounds for the two boxes. These last two beams are for making up the bed of coke. All beams are in a locked box. The ones needed are pulled over the scale lifts a box of sprues and swings it to one end of the car. This crane is fitted with roller bearings and a single motion of a cam lifts the box enough to swing clear of both cars. When the sprues are weighed the crane swings over and gets

a box of coke. When the charge is complete a tally peg is moved down one hole on a tally board.

Fig. 7 shows the charging into the cupola. The cars pass the cupola in the position most convenient to the melter. It was at first intended to dump the box of coke and the box of sprues directly into the cupola, but fearing that the materials would not be distributed uniformly the boxes are dumped on the floor and thrown uniformly over the whole surface with a fork.

In the view a box of coke has already been dumped and shoveled in and the pig iron is being evenly distributed, one man handing it from the car to the man charging. The box of sprues is afterwards dumped off the car. When the car is empty it is shoved ahead and another car takes its place.

Fig. 8 shows eight cars being lowered down the incline to the yard by a friction winch. On the right is seen charges of iron weighed out and piled, enough for one day's melt. These are stored on each cupola platform, to be used if anything should get out of order. The sprues and coke and pig iron could be wheeled up the old incline in such a case if it were necessary.

Fig. 9 shows the crane unloading a car of sand. There are three trucks, each having two wheels and a caster. There are three boxes, which will each hold about 1,500 pounds of sand, and which have drop bottoms dumped with a lever. A truck and one of these boxes are run into each end of the car and two men shovel sand into each box. The third truck stands outside the car on the platform, and the crane lowers the third empty box on it just as two men roll a filled box out on the platform. They hook onto the full box and the crane lifts it onto the roof track, while the men roll the empty into the car for another load. The box is loaded onto a car, on the roof, which is run by a man to one of the openings in the roof,

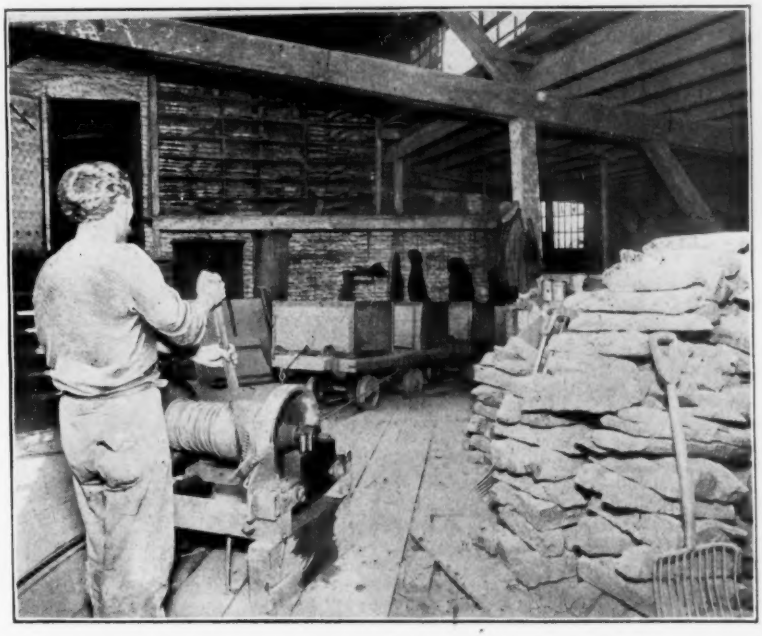

FIG. 8—LOWERING CARS BY FRICTION WINCH

where the bottom is dropped and the car brought back. To unload a car of sand with wheelbarrows takes three hours for six men, while six men with the crane will unload it in one and a quarter hours. Fire-clay is unloaded in the same way, and is dumped into an overhead bin holding two car loads. This bin has in its bottom a hopper with a slide, through which the ground fireclay falls directly into the kettle where it is mixed for cupola daubing.

Iron trays with trips operated by the man in the cab were arranged to unload iron and coke from cars, but the crane is so occupied with hoisting cars to the weighhouse that

iron and coke is unloaded by contract by wheelbarrow. This view shows a man making up a charge of pig iron, taking the required number of pigs from each pile. On the roof is seen the covered exit from No. 2 cupola with empty cars coming out onto the storage track below the storage track for sprues.

trally on the top of any one of these three sets of piles and with very few steps the loader can take the required number of pigs of each kind of iron and pile them at the central part of the car.

The product has been more uniform since mixing iron in this way, than when left to the caprice of a melter. The total weight of

FIG. 9—UNLOADING MOLDING SAND.

Mixing the Pig Iron.—No scrap iron is used, and the mixture is No. 1 soft, No. 2 foundry, No. 4 foundry and a silvery iron varied in proportions to keep the quality uniform. There are three sets of piles containing these four irons. Each grade of pig iron is placed in a pile nine feet wide and fifty feet long. A car can be placed centpig iron and of coke is accurate, and there is, therefore, no discrepancy between weights of material purchased and of castings produced. The remelt is also accurately weighed and the ratio of fuel to iron is accurate. By placing one complete charge on each car and keeping tally with pegs at weigh house and at cupolas no mistakes can be made.

At present we have No. 1 cupola lined to 68 inches and No. 2 cupola lined to 62 inches and both are driven by a single No. 7 Roots blower which has been used eighteen years. This blower when new was rated to melt fourteen tons per hour, but the two cupolas now melt twenty tons per hour with the single blower. We have purchased a new Roots blower of a capacity that will melt thirty tons per hour, which will deliver the iron as fast as the men can carry it away, and will give a continuous stream.

Recovery of Iron From the Cupola Cinders.—When all these devices were in working order it was found that the picking over of the cupola bottom and separating unburned coke and large pieces of iron, and taking cinder to, and running it through the cindermill and back to the weigh house, took more time and power than any other operation connected with the cupolas, and to save this the following plan was adopted: (See Fig. 10.)

After the last iron has been drawn from the cupola at night the breast is knocked in and the slag runs out on the floor, a dam of sand keeping it from spreading. Iron that comes out with the slag forms a thin slab on the ground, which can be separated when cold so that not a particle of iron will be lost.

When the bottom is dropped it is composed of unburned coke, unmelted pigs and small pieces of iron, much of which has run into the coke, and some bits of slag and iron mixed, but nothing is cemented together, because the slag has been drawn off.

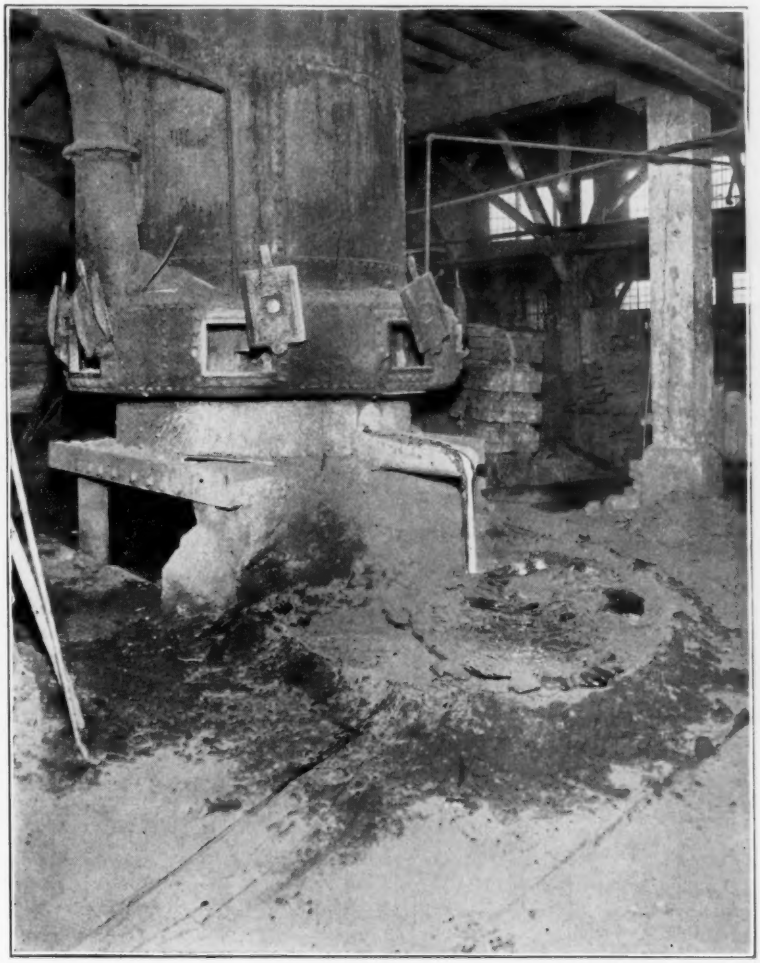

FIG. 10—REMOVING SLAG BEFORE DROPPING BOTTOM.

In the morning the pieces of sand bottom are picked out. The rest is quickly shoveled into cars and run out on the central yard storage track. The sculls from ladles are thrown into the same cars as there is considerable iron adhering to them. These cars are stored during the day on the central storage track, and follow the car containing the last cupola charge and the contents is dumped on the cupola platform. The chargers have nothing to do for an hour after the last charge is on, and they with forks carelessly shovel to one side unburnt coke, and to another place iron and cinder, and to another place unmelted pigs or iron. The cinder and small particles of iron and iron from gangway sweepings are thrown on the last charge. Then the fine material that could not be taken up with the fork is riddled and that which is retained in the riddle is thrown in the cupola. The pig iron that drops with the bottom must be charged next day with enough unburned coke to melt and the rest of the unburned coke can be used as the melter chooses. Both iron and coke having been weighed the previous day, should not be weighed again.

FIG. 11—MOLDER MAKING RECORD OF HIS CASTINGS.

Iron borings or other fine scrap can be put on the last charge before any of the cinder is charged. As soon as the cinder is in the cupola, the iron at the tap hole is perceptibly hotter, the cinder being wet, acts like the wet covering over a blacksmith's fire, the blast being held down, and every particle of

iron and slag is melted out and a cover of hot fine coke is left. The iron and slag are drawn out when the breast is knocked in.

This fine coke is returned each day to the charging door and the melter has quite a quantity to use when he thinks a little extra is needed. This dispenses with all cinder mills, power and repairs, and labor connected with them, and saves all the fine coke and iron that was formerly carted away as mill cinder. It saves every particle of iron from every quarter and prevents material blowing out of the cupola during the last of the heat and lodging on the foundry roof. It costs nothing to sort the bottom after the last charge is on, whereas sorting in the morning must be paid for. In cases where the slag is not drawn from the cupola during the heat it may be necessary to add with the last charges sufficient lime stone or oyster shells or fluor spar to make the slag fluid enough to run out of the tap hole.

We also contemplate enlarging the tap hole so that all iron and slag will run out of the same hole, the slag to be skimmed from the iron and conducted through a side spout to a wheelbarrow which will be taken away as fast as it is full.

Fig. 11 is a view of a molders' folding desk. Two other desks are closed. The method of keeping the molders' piece account is peculiar. Each molder has one of these folding desks in which to place a sheet on which is written the name of each piece that the molder has on his floor, the number he is to make each day, and if it does not run steady the total number to be made. When a molder has shaken out his work he makes separate piles of each kind of castings and marks with chalk on the top of each pile the number of perfect castings. He also marks on his slip the same number. In the morning the castings are wheeled to the cleaning room by contract and a clerk goes down each gangway immediately ahead of the wheelers and compares the numbers on the slip and on the pile and counts each piece and examines closely enough to see if the piece is recorded correctly. He then carries with him the slip, which, when he has collected a sufficient number, he sends to the time keepers' office, when the account is transferred to the regular books. This is completed about 10 a. m., when the books and slips are taken to the discount room, and all discount is entered by marks on the slips and also on the book. (Fig. 12 shows a part of the discount room.) The slips are then placed again in the molder's desk, when he can see what discount he has, and from

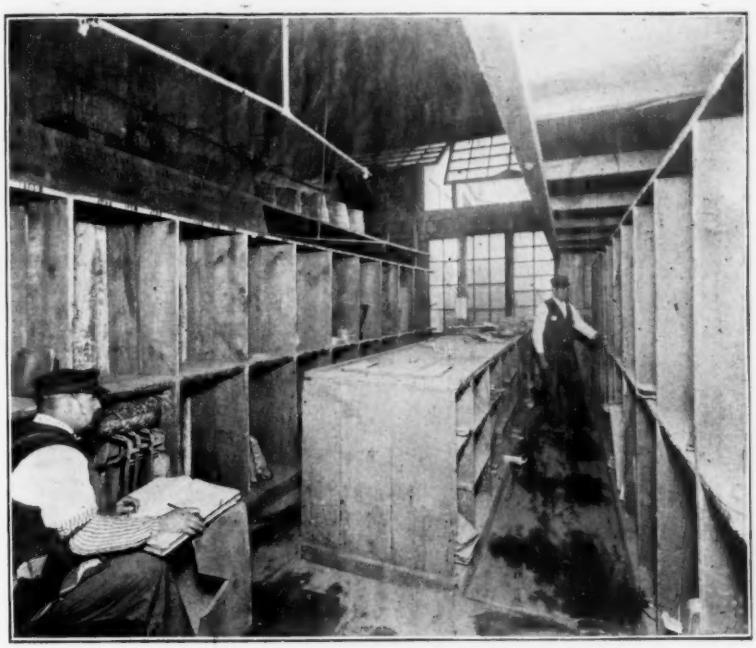

FIG. 12—RECORDING DISCOUNT IN DISCOUNT ROOM.

12 to 2 can inspect it, but cannot take it from the room. If there is any piece that can be made good or should not have been discounted the molder can place it on a table and call the foreman's attention, who can allow it to be fixed. Each molder is furnished with a stamp containing his check number, with which he stamps each mold. In this way each casting contains the molder's number and no mistake can be made in discounting. In figuring up a pay the molder's account is figured separately on the slip and on the book, which checks all operations, and there are never any disputes regarding mistakes in counts. The molder knows exactly what he is earning each day.

On each side of the discount room are bins, each holding the discount of three floor molders. At the center of the room are smaller bins holding the work of three snap molders. This discount is loaded on cars at 2 p. m. and taken to the weigh house.

Fig. 13 is a view of the carpenter shop. The upper floor is used for follow boarding, and making new flasks. The motor is a little to the left. The foreman's bench is just in front where he can see all that is going on. Below on the first floor is a band saw and men are rebarring flasks.

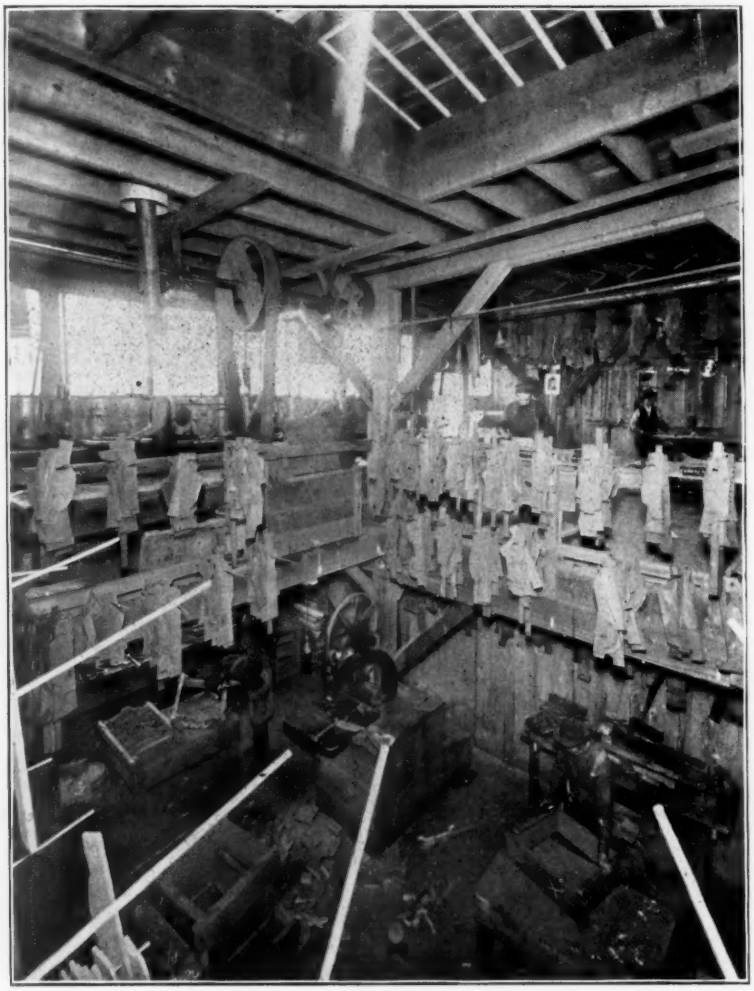

FIG. 13—CARPENTER SHOP FROM SECOND FLOOR.

Fig. 14 is a view of a machine for pulling nails. It will pull 75 nails a minute. On the other end of this machine is a trip-hammer, under which the nails are placed to be straightened. It costs to pull, brighten in a

tumbler, straighten and assort nails 50 cents per keg, and they are as good for the molders as new nails. All nails are taken from old bars, and the bars are then used over again, making a great saving in nails and lumber. On the lower floor are stored all straight flasks and the bars are changed to fit different jobs. On the second floor are kept all cut flasks, those for each stove being piled together.

FIG. 14—MACHINE FOR REMOVING NAILS FROM BARS.

Fig. 15 shows a screen with the crane dumping a carload of sweepings from the foundry gangways. The sand falls through and is removed by a cart, while the iron runs into the box at the lower end of the screen. As soon as the sweepings are all dumped the crane lowers the box to get the iron, which is taken to the weigh house.

Fig. 16 shows a winch for moving steam cars on the main railroad track. At the other end of the track is a sheave around which runs a 5-8 inch steel wire cable, each end of which is wound around one of the drums of the winch. One of the drums runs at twice the speed of the other, and one drum is free to unwind as the other winds the cable. At one point in the cable there is a link into which is hooked the end of a chain, the other end of which is attached to a car. An electric signal tells which rope to wind and when to stop. The motor of the winch is 8 horsepower and will move on the

straight track several cars. It takes one man at the coupling and one man at the winch to move a car or to make up a train. This same winch will be used at a future time to run some kind of coal conveyer to a receiving bin over the boilers, which are already fitted with Murphy smokeless furnaces, which have hoppers for self feeding from this storage bin, but thus far no satisfactory conveyor has been found.

Having electricity, all parts of the works are lighted, saving over $50 each month during a good part of the year in gas bills.

The cost of the apparatus described was about $16,000, which included electric generators and the flask building.

We were not able to unload material from steam cars as we had calculated and the sixty cars which were purchased were all needed in handling cupola material and flasks. Therefore the tracks and cars have not been used to take castings from the foundry to the cleaning room, and for this reason one-half of the tracks are not yet used. We expect to construct a cross between a car and a wheelbarrow by which one man can take half a ton or a ton of plate on the tracks to the cleaning room as quickly as he can now wheel 500 pounds, in which case he would expect to do such work at night, so as to have all gangways cleared and cleaning mills loaded at night. For various reasons we have not saved half the labor that we anticipated, and we expect to

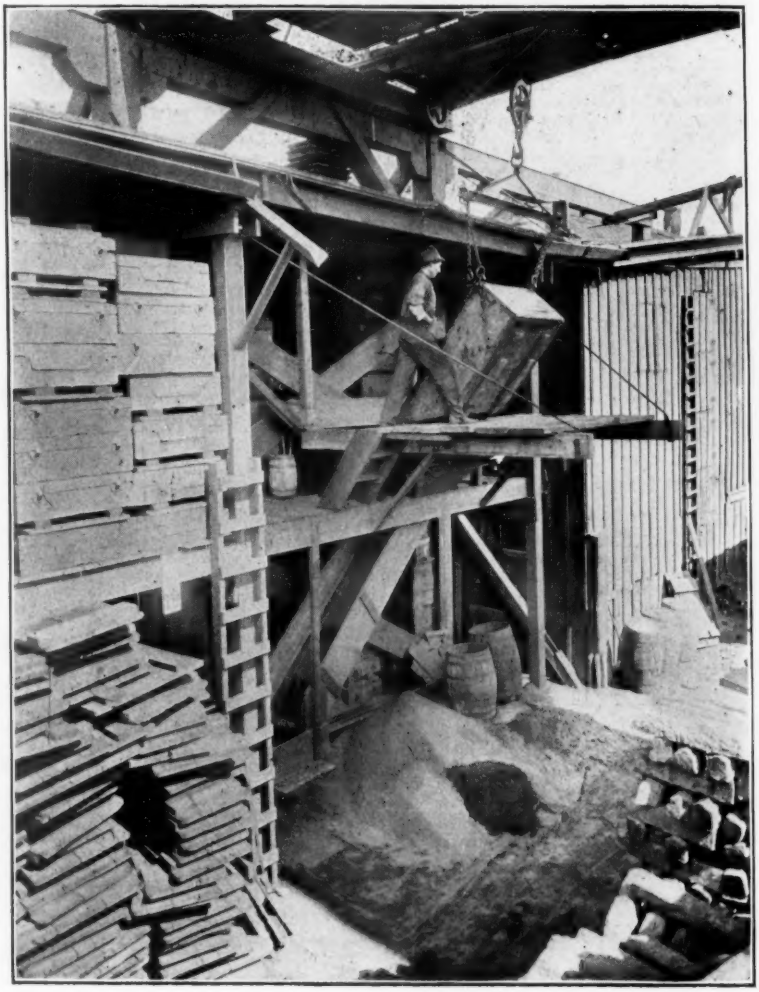

FIG. 15—SCREENING SWEEPINGS FROM GANGWAYS.

do much better in time. As it is, the saving is such that after setting aside $1,000 each year for interest on the investment, we shall pay for the whole investment in three years with the present saving.

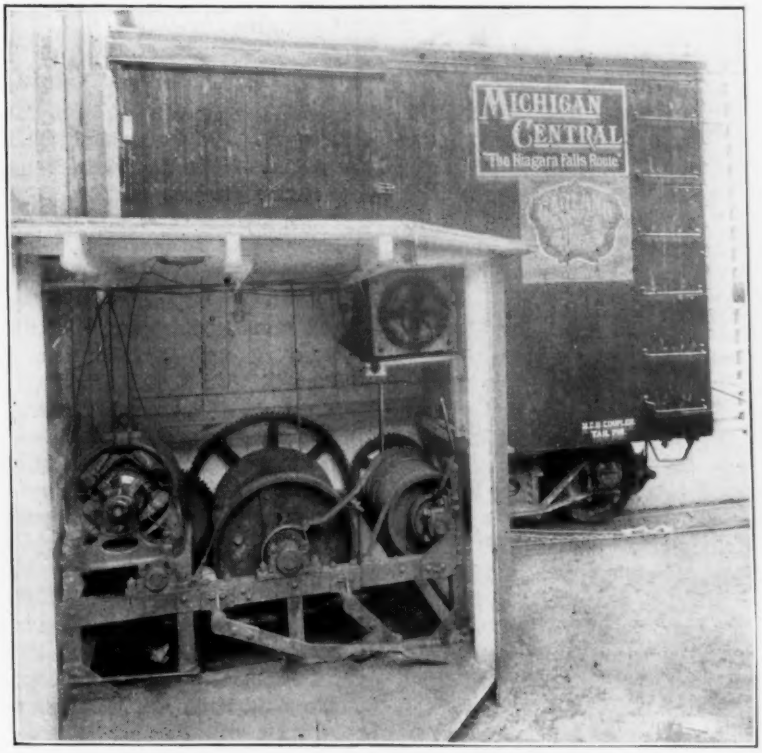

FIG. 16—ELECTRIC WINCH FOR MOVING R. R. CARS.

Useful Foundry Hints.

In reading over your March issue I have been much interested with the various items therein recorded, but more especially with that which pertains to Mr. Moore's criticism of my article on "Feeding," which he chooses to describe as "transcendentalism, evidently from the clouds." Perhaps it may be that Mr. Moore has become somewhat alarmed that his transcendental mantle has fallen upon me before he chooses to part with it. If this is so, I shall give him the assurance, once for all, that I have no desire to minimize in the least any of the good practical matter he has contributed in journalistic form for a length of time. But I must be careful here, otherwise he may take this as a "slinging of King's English," which I interpret to be "sophistry." However, my earnest desire is that he shall long be able to wield his pen in the disseminating of "Useful Foundry Hints."

Of the various figures which my article contained, evidently there is but one with which he seems to disagree, namely, that of the pillow block cap, shown on page 204. This I take to be a compliment from such a foundry veteran, and if all "the old molders" that he speaks of in writing are of the same opinion as himself, I have certainly much reason to be gratified.

I cannot go back and speak of what was done in the good old days of the forties, the fifties, or the sixties; but it is an admitted fact that what was done in those days, when compared with the seventies, the eighties, and the nineties, have little in common with each other. The inspections and high-class workmanship demanded in these days were unheard of when everything may be said to have been done by rule of thumb, as against the modern workshop practice of to-day. I believe that others will say with me that to cast satisfactorily a pillow-block cap as the

one I had in mind, which weighed about 20 cwt. with one gate, and at one temperature, is an impossibilty. The reason of this must be obvious, no matter whether the mold be run from the top, the joint or the bottom. Your readers have now had the opinions of two (shall we say worthy men?), and it is for such as are interested to compare my article with Mr. Moore's in THE FOUNDRY for April 1898, and judge for themselves their value. Probably they will get much to interest them in both, and it is for "the knowing ones" who have to deal with such work to decide for themselves whether the writer's article is "only a theory" or founded on solid practice.

While I appreciate to the full Mr. Moore's criticism, I should have been more pleased had he accepted the invitation given in the closing part of my article—viz., that of extending on the subject—for whether we view shrinkage as the cause necessitating feeding or not, I hold that until we have a due appreciation of the difference existing between shrinkage and disintegration, we have, as it were, only touched the surface of the question, without grasping the kernel, and with your permission, Mr. Editor, I beg of my esteemed friend to write an article on the difference between "Shrinkage and Disintegration of Metals."

I hope I am not asking too much, as I know of no one more qualified to introduce such a subject for debate through the columns of THE FOUNDRY.

And just a word of criticism on "The Case of Shrink-Hole Patching." I must say that it possesses a good bit of novelty and certainly showed good pluck and genius in Mr. Moore devising such a method to save a casting which was doomed to the scrap heap. Taking this to have been done in his younger days as a molder, it is clearly a case of foundry trickery that would not pass undetected the eyes of the modern inspector of to-day, thus showing clearly the difference existing between what may be termed ancient and modern founding.

I should like to have touched on Mr. Moore's other item, which is certainly a Utopian foundry novelty, but your space forbids. Hoping Mr. Moore will remember that what is good to give cannot be ill to take, and if he is inclined to further debate this question I shall be exceedingly obliged to him if he will give a sketch showing his "side feed" and modus operandi generally, as I am sorry to confess that, notwithstanding the care with which I have read it and likewise referred it to others here, it still appears to me ambiguous.

W. ROXBURGH.

Kilmarnock, Scotland.

St. Louis Foundrymen.

A well-attended meeting of the foundrymen of St. Louis was held Friday last at the rooms of the St. Louis Manufacturers' Association for the purpose of forming a trade association for the protection and mutual benefit of its members. The new organization, which is to be called the St. Louis Founders' Association, adopted a constitution and by-laws and elected officers as follows: George Q. Thornton, president; William T. Koken, vice-president, and John M. Harrison, secretary and treasurer.

The following named foundries were represented and signed the constitution: Aetna Iron Works, Carondelet Foundry Company, Christopher & Simpson Amalgamated Iron and Foundry Company, George J. Fritz Foundry and Machine Company, Gerst Bros.' Manufacturing Company, Koken Iron Works, John C. Kupferle, Magnetite Foundry Company, Medart Patent Pulley Company, Pleuger & Henger Manufacturing Company, St. Louis Car Wheel Company, St. Louis Iron and Machine Works, Shickle, Harrison & Howard Iron Company, South St. Louis Foundry Company, Union Iron and Foundry Company, and Whitman Agricultural Company.

Inquiries.

A correspondent wishes information regarding "Petroleum Coke."

"Who knows what kind of metal is employed in tubes of gasoline engines to ignite the gas when heated?"

A correspondent wishes to correspond with makers of, or dealers in a new metal called "Astronium." The Foundry would be glad to publish answers to this query.

Editor Foundry:

We should feel lost without the monthly visits of your magazine. * * May prosperity smile upon you; but, as it takes something more than words to run a business, we enclose our check for another year's subscription.

THE BURR & HOUSTON CO.,

Brooklyn, N. Y.

CAST IRON NOTES.

Devoted to Inquiries from Practical Foundrymen on the subject of Melting and using Cast Iron. Address all Inquiries to W. J. KEEP, care of The Foundry.

THE FRACTURE OF PIG IRON AND ITS PHYSICAL CHARACTER.

One of the most interesting and useful exhibits at the convention of the American Foundrymen's Association was samples of pig iron made in the iron molds of the modern casting machine.

By casting pigs in iron molds and treating all pigs alike the fracture shows exactly what kind of castings the pig iron will make.

With the casting machine the iron is first caught in large ladles and is then poured into a series of iron pig molds that pass under the stream of molten iron. The hot pigs pass through water and are dumped into cars for shipment. The only variables are the condition of the furnace, the temperature when the iron left the furnace, and the chemical composition, but the whole of the iron is collected and held in a ladle until it is of uniform composition, and the pig molds are filled and cooled so rapidly that any chilling tendency is at once apparent in the fracture of the pig. The fracture of sandless pigs is therefore a perfect indication of the kind of castings that they will make. If a non-chilling iron is poured into an iron mold the fracture against the chill will be darker and closer than at the center of the pig. Then conversely, if a pig that was cast in an iron mold shows a darker fracture at the chilled surface it will make a soft casting without any chill. If such pig iron shows a slight chill around the sides of the pig if remelted and cast in a sand mold it will make large castings without chill, but is not fit for small castings, as they would be white.

If we postpone the discussion of chemical analysis in the foundry a little while until the furnacemen generally adopt casting machines for pig iron, we shall find that the fracture of the pig made by the machines will show exactly what kind of castings can be made from them. Then there will be no chance for the fracture to be deceptive.

There will be no necessity for the founder to have a chemical analysis because he can see the character of the iron that he buys.

The physical properties of cast iron do not correspond to the chemical analysis, and they will not correspond when all pigs are cast in iron molds, but the fracture will then show exactly what kind of a casting can be made from the pig iron.

That is mechanical analysis; the quality of the metal can be seen by the eye.

The best mechanical analysis is the measure of shrinkage, which shows the influence of the silicon contained in the iron, along with all the other elements, and in the presence of all conditions which influence the physical quality.

With the fracture of sandless pigs, and with the measure of shrinkage, we shall have a guarantee of the castings that can be produced, and we will know that the iron can be softened by increasing silicon.

This can be done by a founder who has not had the advantage of an education in a school. Many founders are of this kind and it is very gratifying that they will not need to suffer on this account. Another favorable feature is that the founder needs no help, and can get the necessary information quickly and with no expense, and the information will be positively reliable.

At the meeting of the foundrymen's association a paper was read and two pigs of iron and test bars from each were shown to prove that the appearance of the fracture of the pig would lead the founder to select the wrong iron, and it was stated that the chemical analysis of the two pigs showed what the physical quality of each would be.

The author gave the following data. The open grained metal in a test bar one inch thick showed a shrinkage per foot of .150 and half inch thick .220, and the silicon was 1.15 per cent and sulphur 0.07. The fracture was open, bright and rather light colored. The close grained metal in a test bar one inch thick showed a shrinkage of .092 and half inch thick .137, and the silicon was 2.67 per cent, and sulphur 0.06. The fracture was dark and very close.

The measure of shrinkage of these two irons is a mechanical analysis, showing that the open grained iron does not contain enough silicon for castings as thin as half inch, but that it would make excellent castings more than one inch thick.

The mechanical analysis shows that the close grained iron will make the thinnest castings, and the fracture of the pig shows that on account of its exceedingly close grain it will make a close grained and therefore a strong casting one inch thick.

The records of the test bars are as follows, and all bars are one and one-half inches wide:

Thickness.	Shrinkage. Open.	Shrinkage. Close.	Measured strength. Open.	Measured strength. Close.	Strength reduced to 1 inch thick. Open.	Strength reduced to 1 inch thick. Close.
⅛	.293	.178	110	164	7040	10496
¼	.266	.163	320	344	5120	5504
⅜	.242	.150	550	530	3982	3768
½	.220	.137	860	920	2150	2300
⅝	.200	.125	1280	1208	3277	3092
¾	.182	.112	1600	1640	2844	2915
⅞	.165	.101	2240	2320	2925	3032
1	.150	.092	2900	2860	2900	2860
1¼	.148	.088	3640	3500	2329	2240

All tests of bars of cast iron of varying size cast from the same iron show that the thinnest castings are strongest and that the thickest castings are weakest, because rapid cooling makes a close compact grain and strong casting. Therefore pigs cast in iron molds will have close compact grain and will make close grained strong castings.

It is seen that the chemical analysis (silicon 1.15 and 2.67) gave no indication whatever of the strength of the castings, but it would tell one familiar with chemical analysis that their castings with 1.15 silicon would be white and with 2.67 silicon would be gray. But mechanical analysis (shrinkage .220 and .137) told the same thing much quicker and with less expense and anyone could do it.

The dark close grained fracture of the close pig would tell an experienced founder that it would produce a close grained strong casting. The chemical analysis of the two pigs did not indicate the physical character for, excepting the very thin castings, the strength of each corresponding size of test bar is practically the same.

Among the Foundries.

The Bettendorf Wheel Co., Springfield, Ohio, is erecting a new foundry, 177x75 feet.

The iron foundry run by D. W. Dowd, at Norwood, Mass., has been closed down for good.

The Sterling Mfg. Co., Sterling, Ill., is building an addition to its foundry, 40x60 feet.

The North Reading plant of the Reading Foundry Company has gone into operation with 100 hands.

The Franklin Foundry, Worcester, Mass., is to be enlarged by an addition of 50 feet, doubling its capacity.

Drake's Iron Foundry, at Easton, Mass., which has been idle for several years, has been put into operation.

The Globe Brass & Iron Manufacturing Co., Lorain, O., whose foundry recently burned down, is rebuilding.

The Solid Steel Casting Company, recently organized, will operate the Eureka Steel Casting plant, at Chester, Pa.

The Silver Bow Foundry and Machine Company has been incorporated at Butte City, Montana. Capital $15,000.

The plant of the Watt Plow Company, Richmond, Va., was damaged $12,000 by fire May 26; fuly covered by insurance.

The Detroit (Mich.) Brass & Iron Novelty Company, has transferred its foundry and all its property to R. McC. Brady.

The Pennsylvania Car Wheel Company, Pittsburg, Pa., has increased its capital stock from $100,000 to $200,000, paid in.

The American Car & Foundry Company are building a new foundry as an addition to their Wells & French plant, Chicago.

Joseph Borgerding has sued the St. Paul Foundry Company for damages for personal injuries, demanding damages in the sum of $25,000.

The Girard Stone & Foundry Co. has sold the land on which its plant is erected to the Youngstown (O.) Foundry & Machine Co. for $450.

The Glenville Foundry & Machine Co., of Glenville, Pa., executed a deed of assignment for the benefit of creditors to Jacob A. Klinefelter.

The new wheel foundry of the American Car & Foundry Company, at St. Louis, has been put in operation, employing more than 300 additional men.

The Jacoby Foundry & Machine Company, of Moberly, Mo., have been incorporated, with a capital stock of $20,000, by F. C. Jacoby, W. W. Jacoby, and H. G. Crake.

The Canton, O., Board of Trade has secured the $8,000 bonus required by the Chilled Roll & Cast Steel Gear Co., and have entered into contract with the company to locate at Canton.

Sterne Brothers' Company, of San Diego, Cal., machinists and foundrymen, have been incorporated, with a capital of $20,000. The incorporators are C. E. Sterne, I. C. Sterne, S. L. Davis and R. Davis, of San Diego, W. E. Sterne, and M. E. Sterne, of Topeka, Kan.

The McCormick Bros.' Iron Works, of San Francisco, Cal., have been incorporated, with a capital of $20,000, to do a machinery and general foundry business. Thos. A. McCormick, John McCormick, Wm. H. McCormick, Edward O'Neil, and J. A. McCormick are the directors.

The Atlantic Brass Company, of Jersey City, N. J., have been incorporated, with a capital of $1,000,000, to make car axle bearings and other railroad supplies. The incorporators are Scott McLanahan, Charles M. Reynolds, Henry Meyers, Robert S. Green, Charles H. Burke.

The Ontario Iron Works, at Canandaigua, N. Y., have been reopened and will hereafter be conducted as a complete foundry and machine shop, and will be run on full time. D. J. Finlay, of Rochester, will represent Rochester capitalists in the management of the concern.

J. M. Torrance and A. D. McIntosh, of Monmouth, Ill., have dissolved partnership, and the foundry will in future be conducted by A. D. and A. C. McIntosh, under the name of McIntosh Foundry & Machine Works. J. M. Torrance will continue the conduct of the planing mill and wood-work as heretofore.

The Sattley Plow Co., of Springfield, Ill., has closed a deal for the use of the building of the Decatur Malleable Iron Company. Before the foundry is started up many improvements will be made, and the annealing ovens will be increased in capacity to 1,200 tons a year. The plant will be worked to its full capacity.

The Ft. Wayne Sentinel states that the Standard Wheel Company's plant, at Ft. Wayne, Ind., has been sold to John H. Bass, the consideration being $40,000. The wheel company have not operated the Ft. Wayne factory for several years, and Mr. Bass bought the property that he might enlarge his foundry and machine business.

The Anaconda Brass Foundry Co., organized by Albert Waycott, of Albert Waycott & Co., and others, capital $50,000, has leased the buildings and purchased the machinery, furnaces, flasks, etc., of J. W. Garratt & Co., St. Louis. The company will manufacture railroad brasses, making a specialty of car and locomotive journal-bearings.

The Sessions Foundry Co., Bristol, Conn., has adopted a schedule for Saturdays during the summer months that is very welcome to the employes. The plant will commence operations at 6 o'clock, close down at 11 o'clock for lunch, resume at 11:30 and close for the day at 3:30 o'clock, making nine hours' work, for which the day workers, and there are many of them, will get ten hours' pay.

It has been decided to liquidate the Drummondville Foundry Co., of Drummondville, Que. The company was organized several years ago under a provincial charter, authorizing a capital of $30,000, but the business is reported to have never been of a very profitable character. It is claimed that with reasonable time for the realization of assets, all liabilities can be paid in full, but several threatened suits, if persisted in, may lead to an application for a judicial winding up, which would tend to depreciate the assets.

The annual meeting of the stockholders of the Nashua (N. H.) Co-operative Foundry Company was held at the company's office. The reports of the treasurer showed that the company had held its own during the hard times of the past year and that there is a prospect of a decided improvement and plenty of work during the year on which they have entered. The following officers were elected: John H. Field, president; Thomas W. Keeley, treasurer; Patrick Connell, clerk of company; directors, J. H. Field, James McQueeney, Thomas W. Keeley, Anthony J. Keeley, Patrick Connell, John J. O'Shea, William Molloy, Bernard Garrity.

The Springfield (O.) Sun, of May 25, says: "The initial heat in the new foundry of the Foos Manufacturing Company was poured off yesterday afternoon. Quite a number of visitors, including ladies, were present to witness the event. The fire in the cupola was started by Miss May Miller, of Williamsport, Pa. This new foundry is a source of pride to the Foos Company, and is a very complete structure. It contains two cupolas, one of sixteen tons capacity and one of six tons capacity. The smaller one was used yesterday, and only about three tons of

metal was melted. The sixteen-ton cupola is the largest one in the city. All the machinery in the foundry is operated by electricity generated in the plant. This addition to the already large plant of this company will begin operations at once and will be running a full force of molders in a few days."

Western Foundrymen's Association.

The annual meeting of the Western Foundrymen's Association was held at the Great Northern Hotel, Chicago, May 10th, at 7:30 p. m., Vice-President A. M. Thompson in the chair.

The secretary presented a verbal annual report, calling attention to the fact that the association has not been as prosperous as could be wished in the past year, and stating that the membership has fallen off to a considerable extent. The secretary urged every member to use his influence to secure new members and to arouse new interest in the work of the association. It has been suggested that the association take up the question of controlling prices in the territory it covers, and the secretary reported that a committee had been appointed to canvass this question, with instructions to make a report embodying some plan whereby the idea could be adopted. The work of the association the past year has not covered much ground, as it has been almost impossible to secure papers to be read at the meetings.

The report of the secretary was received and filed.

The treasurer reported as follows:

Balance on hand May 15, 1899	$213 47
Indebtedness May 15, 1898	
Total receipts, May 15, 1898 to May 15, 1899	383 58
Expenditures, May 15, 1898, to May 15, 1899	588 85
Balance on hand May 15, 1899	8 20
Indebtedenses May 15, 1899	

Details of expenditures:

Previous secretary's expense	$ 7 00
Printing and stationery	114 25
Postage	75 10
Stenographer	336 00
Exchange	45
Banquets, entertainments, etc.	30 00
Miscellaneous expenses, telegrams, express, etc.	6 05
Total	$588 85

Comparison of years ending May 15, 1898, and May 15, 1899:

	May 15, 1898.	May 15, 1899.	Decrease.
Total receipts	$383 28	$ 944 17	$560 59
Total expenditures	588 85	1,199 38	610 53
Balance on hand	8 20	213 47	205 27

The treasurer's report was received and ordered placed on file.

The Committee on the Control of Prices and Uniform Credit System, appointed at the last meeting, reported little progress, and asked for more time, which, on motion, was granted.

The election of officers was then proceeded with, which resulted as follows:

President—C. J. Wolff, L. Wolff Mfg. Co.

Vice-President—William Ferguson, Wm. Ferguson Foundry Co.

Secretary—B. M. Gardner, The Iron Trade Review.

Treasurer—B. J. Cleveland, Cleveland & Parr.

Directors—James Frake; A. M. Thompson, Link Belt Machinery Co.; C. H. Hopke, Western Foundry Co.; M. Salomon, Chicago Architectural Iron Co.; F. G. Coffeen, Deering Harvester Co.

Editing Committee—B. M. Gardner; J. E. Evans, S. Obermayer Co.; W. A. Jones, W. A. Jones Foundry & Machine Co.

It was moved and seconded that the chair appoint a committee of three to secure the next convention of the American Foundrymen's Association for Chicago, and the committee was instructed to use their best efforts to this end. Adopted.

The chair appointed as such committee C. J. Wolff, S. T. Johnston and W. A. Jones.

A general discussion of the benefits to be derived from membership in the Foundrymen's Association followed. The meeting was addressed by Secretary John A. Penton, of the American Foundrymen's Association. Mr. Penton gave some reasons why the various foundrymen's associations have not been as successful as usual in the past year, and expressed the hope that with the better business the foundrymen of the country are now getting the membership and attendance at meetings of all the associations will be largely increased. Mr. Penton extended a very cordial invitation to western foundrymen to attend the Pittsburg convention of the American Association.

Personal.

Jas. Bowron, vice-president and treasurer of the Tennessee Coal, Iron & R. R. Co., has sailed for England, on business.

A. D. Jones has accepted the position of foreman of the Wyoming Valley Scale Company's foundry, at Forty Fort, Pa.

Daniel Fox, having retired from the firm of Best, Fox & Co., Pittsburg, brass founders, has sailed for his old home in Ireland.

T. B. Mellon, of Pittsburg, has succeeded the late Alfred E. Hunt as president of the Pittsburg Reduction Company, at New Kensington, Pa.

John A. Walker, vice-president of the Joseph Dixon Crucible Company, Jersey City, N. J., sailed for Europe May 23, on the "Kaiser Friederich."

Dr. Richard Moldenke and Geo. S. White, of the McConway & Torley Company, Pittsburg, have resigned, and will shortly enter a wider field in the foundry industry.

Will J. Fogarty, formerly with the Stilwell-Beirce & Smith-Vale Company, has been appointed general superintendent of the Magnetic Foundry Company, St. Louis, Mo.

J. C. Warne, formerly with the Pennsylvania Car Wheel Company, Pittsburg, has established a pattern works, making a specialty of car wheel patterns, and designs of same, at Buffalo, N. Y.

James M. Rutland, for many years past foreman of the Somersworth foundry, at Dover, N. H., resigned his position May 13, and has removed with his family to Lisbon Falls, Me., where he will reside in future.

E. A. Uehling, of the Uehling casting machine, of Pittsburg, has sailed for Europe. He will be connected with the Uehling Company, Ltd., of England, and will make his headquarters at Middlesborough, England.

Arthur P. Baker, who has had the management of the Nashua Iron & Brass Foundry Company since 1890, has retired from the management though he retains his interest in the business. H. Oldfield will act as superintendent of the iron department, and Walter Emery will oversee the machine department.

Owing to the continued illness of P. S. Cochran, president of the Washington Coal & Coke Company, at a board meeting held at their office, at Dawson, Pa., on May 20, the office of vice-president was created, and J. R. Laughrey, formerly treasurer, was elected to fill the position. The offices of secretary and treasurer were combined, and John H. Wurtz was elected to fill both positions.

Daniel Everett, one of the old stand-bys in the foundry department of the American Tool & Machine Co., received a pleasant surprise last Saturday afternoon from his shopmates. For twenty-five years Mr. Everett has come every morning from his home in Walpole to his work at the American Tool Company's shops. He has seen the company grow to a giant among the machine shops of the country, and when he announced last week that he had accepted the superintendency of a shop nearer to his home his shopmates determined that they would give him some token to remember the old shop by. Accordingly, last Saturday afternoon Mr. Everett was surrounded and Superintendent Sanborn, of the foundry department, in a felicitous speech, presented Mr. Everett with an elegant reclining chair as a slight token of the esteem which his fellow workmen had for the veteran shopmate. Mr. Everett feelingly responded, and assured the boys that their parting gift and good wishes would always be cherished. Mr. Everett was a pioneer in the foundry business in Hyde Park. About thirty years ago he and his brother were together in the foundry which stood on the site of the present Brainard foundry, and he has been with the American Tool Foundry since the very start. He goes to Norwood to take charge of the Plimpton Foundry, the proprietor of which resides in Walpole, where Mr. Everett has resided for many years.

Fires and Accidents.

Frank O'Brien's foundry, Peoria, Ill., was damaged $2,000 by fire May 24.

A small fire on May 8, in Frank Hayes' foundry at Superior, Wis., did $50 damage.

A loss of $500 was sustained by fire at the foundry of Smith & McLaughlin, Brooklyn, N. Y.

The pattern room of the Erie Foundry, Erie, Pa., was burned May 12. Loss, about $1,000.

The foundry of the Globe Brass & Iron Mnfg. Co., Loraine, Ohio, was destroyed by fire, May 20.

Keator & Wells' foundry, at Cortland, N. Y., was damaged $4,000 by fire May 18. Covered by insurance.

The foundry of Sibley & Ware, South Bend, Ind., was damaged, the middle of May, $4,000, by fire.

About $800 damage to the Auburn Stove Foundry, Auburn, Me., resulted from fire May 9. No insurance.

Fire damaged the foundry of Greger & Co., Philadelphia, May 10, to the amount of $1,000. Covered by insurance.

The Dighton (Mass.) Stove Lining Company had insurance of $24,500 on its plant that was recently destroyed by fire.

Several hundred dollars' damage to the foundry of Raymond & Campbell, at Middleton, Pa., resulted from fire, May 9.

The McBeth foundry, at Cleveland, Ohio, was almost entirely destroyed by fire May 19. Loss, $4,000. Covered by insurance.

A corner of the pattern house of the Pittsburg foundry, Pittsburg, Kan., was blown out by an accidental explosion of giant powder.

Patrick Collins, at work in the Barbour & Stockwell foundry, Cambridge, Mass., was badly hurt by derricks falling upon him. He was carried in an ambulance to the Massachusetts General Hospital.

The machine shops and foundry of the Mountain Copper Co., at Keswick, Cal., together with the machinery, two locomotives and a number of box cars, were destroyed by fire May 11. Loss, $75,000.

John Purder, employed at the foundry of John Newel, Gardiner, Me., was heating some water with a hot casting, when it was blown out of the vessel by an explosive force, badly injuring him, though not seriously.

Three workmen were killed and three others were seriously injured by an explosion at the Cambria blast furnaces at Johnstown. The men were on the roof of an adjoining building, and a shower of molten iron fell upon them.

James Gillespie, 37 years old, was tempering steel in vitriol at the J. M. Potter Foundry, East Boston, and the vessel containing the vitriol burst, throwing the acid over his face and arms, burning him badly. He was taken to the City Hospital, and placed on the dangerous list.

What's in a name? Read J. D. Smith's ad.

Deaths.

Hugh F. Davitt, manager of the Trask Iron Foundry, Springfield, Mass., died suddenly of heart failure on May 1.

George E. Noyes, of Washington, D. C., formerly a member of the firm of Gray & Noyes, died May 19, 72 years old.

Frank Winne, manager of the railroad department of the Crane Company, Chicago, died at his home in Evanston, Ill., May 29, of pneumonia, aged 41 years.

James M. Upham, for the past four years foreman of the Springfield Foundry Company, Springfield, Mass., died at the Springfield Hospital, May 25, after an illness of less than a week, aged 47 years.

William D. Southard, the stove manufacturer, of Peekskill, N. Y., died at his home in that city May 15, of Bright's disease, aged 59 years. He had filled many public offices of honor and was universally highly esteemed.

Charles Dwight Merryman, of Northfield, Mass., died May 26, of cancer of the stomach. He was a soldier in the civil war, having enlisted in the First Regiment of Barden's Sharpshooters; he served three full years and rose to the office of captain. Capt. Merriman was, till recently, a partner in the Eagle Foundry Company, at Hinsdale, N. H.

David L. Bartlett, senior member of the firm of Bartlett, Hayward & Co., Balto, Md., died May 11, at the age of 83 years, of pneumonia. Mr. Bartlett was also president of the Ryan & McDonald Mnfg. Co., and was also officially connected with a number of other important business and public institutions of Baltimore. He was a vice-president of the National Manufacturers' Association of America.

Daniel T. Kelley, head of the firm of Daniel T. Kelley & Sons, foundrymen of Portland, Maine, died in that city on May 5, aged 54 years. He was born in Ireland, and came to the United States when a child. He learned the trade of machinist and started several years ago a foundry in a small way, which he built up to a large business, extending throughout New England. He was also engaged in the manufacture of agricultural implements.

Jacob Spang, one of the pioneers in the development of the iron industries of the United States, and personally known to

thousands of iron workers throughout the country, died at his home, in Allegheny, Pa., April 17th, aged 80 years. For many years he operated the Spang-Chalfant mills at Pittsburg, and under his personal supervision was made the armor plate used in the construction of the iron-clad Monitor for the Federal Government in the great Civil War, which vessel may be said to have revolutionized all methods of modern naval warfare.

New Buildings and Enlargements.

A new foundry, 50x100 feet, is being erected at Seymour, Conn.

Clements Busch is building an addition to his foundry at Quincy, Ill.

S. Y. Hall has started up a machine shop, brass and iron foundry, at Ellensburg, Wash.

The Sterling Manufacturing Company, of Sterling, Ill., is building an addition to the foundry.

A wing 375x75 feet is being added to the Troy Malleable Iron Works foundry, at Watervliet, N. Y.

Plans are being prepared for an extensive addition to the shops of C. Ridgway & Son, Coatsville, Pa.

The W. E. Caldwell Co., of Louisville, Ky., has been granted a permit to build an $8,000 foundry.

Eaton, Cole & Burnham, are building a one-story frame addition to their foundry at Bridgeport, Conn.

A new foundry and machine shop is being built at the Michigan Alkali plant, north of Wyandotte, Mich.

The Kings County Iron Foundry Company has been incorporated at New York, with capital stock $50,000.

The American Car and Foundry Company is building a new foundry at its Wells & French plant, Chicago.

R. E. Parsons has been granted a permit to build a two-story brick addition to his foundry at Bridgeport, Conn.

The Rock Island R. R. Co. contemplates the erection of foundry and construction shop buildings at Valley Junction, Ia.

Timms Brothers, Rochester, N. Y., have completed their new foundry. It is 38x70 feet. It has been started in operation.

The Waukesha (Wis.) Malleable Iron Company is building additions to its plant. An addition to the annealing room will be 64x70 feet.

The Rogersford Foundry and Machine Company, Rogersford, Pa., will build a new plant on ground purchased of the Alpha Paint Co.

The Malleable Post & Iron Company, St. Paul, Minn., have been incorporated with a capital of $60,000, by J. Lockey, W. H. Kent, J. S. Wiggins.

Contracts have just been let for the erection of the Gray Iron Casting Co.'s new buildings at Mt. Joy, Pa., to replace those destroyed by fire.

The Peru Steel Casting Company, of Peru, Ind., capital $400,000, has been incorporated. Geo. A. Swartout, W. J. Cook and C. L. Sullivan, incorporators.

The Franklin Foundry Company, Milford, Mass., contemplates erecting a 50-foot extension to the foundry, to accommodate greatly increased business.

The brass foundry at the General Electric Works, Schenectady, N. Y., will shortly be enlarged to accommodate an increasing business in that line of work.

Landers, Wary & Clark, New Britain, Conn., have added a foundry and annealing room to their hardware manufacturing plant. The addition is 75x25 feet.

Mr. A. H. Patch is building a new manufacturing plant, including a foundry, at Clarksville, Tenn., wherein to manufacture his "Black Hawk" corn shellers.

The Anaconda Brass Foundry Company, of St. Louis, Mo., has been incorporated by Albert Waycott, Frank C. Stevens and Thomas Dunn; capital stock, $50,000.

The Standard Scale and Supply company, of Bellefonte, Pa., will erect a new foundry and smith shop. It now employes 100 men and will greatly increase this number.

It is reported that the Hercules Pipe Foundry, Anniston, Ala., recently leased by H. M. Wheeden, of Boston, will enlarge the plant. Mr. Wheeden is now in Anniston.

Work has begun on the improvements to be made to the works of Watson, Fry & Co., at Bath, Me. An addition will be placed on the foundry, making it twice its present size.

The plans for the Olds Motor plant, Detroit, Mich., include a machine shop 70x300

feet, 2 stories; foundry 70x140 feet; storage house and offices 50x179 feet, two stories; blacksmith shop, 31x100 feet.

The Muncie Foundry & Machine Company, of Muncie, Ind., is erecting an addition 50x125 feet. The company will do a general foundry and machine business, and will manufacture gears of all kinds.

The Prox & Brinkham Mnfg. Company, successors to Frank Prox and Phoenix Foundry & Machine Works, Terre Haute, Ind., have just completed a new foundry building, equipped with a 15-ton crane.

The Standard Foundry Company, Detroit, Mich., has filed articles of incorporation. Capital stock, $10,000. Incorporators, Horace Turner, 400 shares; Scott H. Morris, 400 shares, and Constance F. Prince, 50 shares.

The Youngstown Foundry & Machine Co. has purchased a tract of land 100 feet square and expects to erect in the fall an extensive addition. The company announces that it will go into the manufacture of tin-plate machinery.

The Uniontown Acme Radiator Company was organized at Uniontown, Pa., last week. The officials are Fuller Hoggset, president; Altha L. Moser, vice-president; Lloyd S. McCrum, secretary, and Isaac W. Semans, treasurer.

The Walter Steele Malleable Iron and Steel Company, Reading, Pa., has been organized. President, Cornelius V. Seidel, of New York; J. F. Whipple, secretary and treasurer. They expect to manufacture crucible steel.

E. W. Kerrihard, Red Oak, Ia., is erecting a two-story building adjoining his foundry for a shop and warerooms. He is also closing his uptown office and will transact all business in the new building. Mr. Kerrihard is preparing to push the manufacture and sale of his water lift and pumps.

Many employing foundrymen of New York City are said to have signed an agreement with local iron molders' unions which provides for annual joint conferences to fix wage scales and methods for amicably adjusting intervening trade difficulties which may arise. Under it strikes and lockouts will be averted.

An addition is to be built to the foundry of Webber & Philbrick on Front street, Waterville, Maine, and a crew of men is at work excavating for the foundations. The dimensions of the addition will be 80x60 feet and two stories high. The terms of the contract call for the completion of the building in June.

The Home Stove Company has received the plans from J. W. Ackerman for a foundry to be erected in connection with its plant on West Eighteenth street, Chicago. The building will be one story in height and will have ground dimensions of 72x112 feet. The walls will be of brick and stone. The plans provide for a cost of $6,000.

The Quincy Stove Manufacturing Company, Quincy, Ill., has been incorporated with a capital of $40,000. Incorporators, Joseph L. Sheridan, J. H. Tenk and Bernard H. Brackensick. The plant is yet to be built, but it is expected the business of making stoves will begin in August, and that about seventy-five hands will be employed at the start.

Graff & Co., of Pittsburg, have made application for a charter of incorporation. The incorporators are James F. MacKee, Henry L. Graff, John D. Graff, Abram W. Wall and Frank F. Jeffries. This new corporation will take over the business of Graff & Co., of Pittsburg, manufacturers of stoves and ranges, whose new works are located at Monongahela City, Pa.

The Valley Iron Works, Williamsport, Pa., are erecting a new and complete foundry, 55x165 feet, with additions for fan and engine rooms, casting-cleaning room, rattler room, cupola house and core ovens. The plant will have two cupolas, stock elevator and traveling crane, the latter to be operated by compressed air, as will be the several special molding machines to be installed.

A charter has been applied for the incorporation of the Jacoby Foundry and Machine Company, of Moberly, Mo., which has been operated on a small scale by F. C. Jacoby. The plans for improvement include a new foundry, machine shop and storerooms. The incorporators are Messrs. F. C. and W. W. Jacoby and H. G. Krake, who for nine years has been assistant freight agent of the Missouri Pacific Railroad. Capital stock, $20,000.

The Ross-Mehan Foundry Company, Chattanooga, Tenn., is now erecting a new office building, which will add considerably to the size of the plant. The new building is of brick, and is two stories in height. The roof is now being put on, and in a short time

the building will be ready for use. The present office will be added to the operating portion of the building and this will give much more room for work. The business of the concern is steadily growing, and more room for operations has become a necessity.

Mr. John Freeman, of the Freeman Foundry and Machine Works, at Fourteenth and Main streets, Joplin, Mo., has arranged to build additions to his already large works which will cost $20,000 to $30,000. When finished the works will extend from Main to Wall street and from Fourteenth to the Frisco right-of-way, giving a frontage of 100 feet on Main and a full block on Wall street. The improvements include a boiler house with an immense traveling crane and another foundry and machine shop. The present works employ 100 men; the new works will employ 500. The present payroll is $2,000 per week; it will be between $8,000 and $10,000 when the new works are running full blast.

Mr. J. D. Smith, the foundry supply man of Cincinnati, Ohio, has evidently "struck it rich" in the discovery of a new core compound, and he is offering a prize of $25 for a name for the article.

Spanish-American War Panorama

is one of the war books which is likely to be in continuous demand. It is a panoramic record of the triumph of Yankee Doodle. The eagle flaps his wings on every page, and "Old Glory" waves around and above every scene. Prominent officers connected with the war are here portrayed, as well as many of the "men behind the guns." Military life is pictured to the eye, from recruiting to guard mount and skirmish line. Nor is the ludicrous omitted. The company cook receives the attention due to his importance; the mess is shown; cavalry scenes are given; the hospital arrangements are depicted; the heroines of the Red Cross service are displayed; street scenes in Havana, Santiago and elsewhere are unrolled, the new citizens or subjects (which are they?) of Uncle Sam appear and disappear as the leaves are turned.

In a word, the gazer visits the new localities and sees the tumultuous new life, without the risk or expense of a sea voyage.

The Album is 5½x8 inches, weighs 12 ounces, printed on finest coated paper.

Sent FREE to any address in the United States, Canada or Mexico, for 12 cents in stamps or coin, to cover postage and packing. Copy may be seen at any ticket office of the Big Four Route.

Order at once, as the edition is limited.

Address WARREN J. LYNCH, General Passenger and Ticket Agent "Big Four Route," Cincinnati, Ohio.

Mark envelope "War Album."

From the J. W. Paxson Co., Philadelphia, Pa., we have received a neat little catalogue, 4x6 inches, full of illustrations and information concerning molding machines which they sell. These machines range from the size used in bench molding to the large ones for pulleys of 84-inch diameter, and gears of equal size.

The Damascus Bronze Co., Pittsburgh, Pa., have issued a neat, artistic pamphlet, telling all about phosphor bronze, nickel bronze, phosphorized copper, phosphorized tin and Babbitt metal. This book gives a formula for making phosphor bronze, and it is said that any foundryman can make it.

The Franklin Crown Fire Brick seems to be making a splendid reputation for itself. We have just learned through the Garden City Sand Co., general sales agents throughout the Northwest for this brick, that they have recently made shipment to various points in the extreme West, California, New Mexico, old Mexico and Russia. There is no question but what a high grade article, such as Franklin Crown Fire Brick, is bound to win its way wherever fire brick are used.

J. D. Smith's ad. is interesting.

Catalogue No. 5 has been received from the Atlanta Stove Works, Atlanta, Ga. It contains over 100 7x10 pages and is elaborately illustrated. This plant covers over two acres of ground.

We have received from the American Machinery Co., of Grand Rapids, Mich., their 6x9 catalogue describing and illustrating the Oliver wood trimmers. Under the heading, "What It Will Do," it is claimed that an Oliver wood trimmer will trim a rough sawn end of hard or soft wood, square, or at any angle, the surface being left so smooth that sandpaper will scratch it. The book is profusely illustrated.

NOTICE!

Advertisements in this column, 30 cents a line for each insertion About seven words make a line. The Cash and Copy should be sent to reach us not later than the 20th to insure publication.

Answers addressed to our care will be forwarded.

TO SUBSCRIBERS

whose names appear on our **subscription** list, we will give one free insertion under this heading to those in want of positions, the advertisement to occupy a space of not more than five lines. Additional space or insertions must be paid for in advance at regular rates.

FOR SALE—One No. 4 Roots blower; in good order. Address Box 272, care THE FOUNDRY.

WANTED—Cupola; 24 in. to 26 in. inside lining. Colliau or Whiting preferred. Must be in good order and cheap. Address CUPOLA, Box 271, care THE FOUNDRY.

FOR SALE—Cheap; two or three iron carriages for core ovens, suitable for the heaviest work. Address, Bridgeport Deoxidized Bronze & Metal Co., Bridgeport, Conn.

WANTED—Foundry foremanship by man of 20 years' experience. Can handle all kinds of men to advantage. Best of references. Address Box 280, care THE FOUNDRY.

WANTED—Position as superintendent of foundry by experienced manager. Specialties, chilled plows and agricultural machinery. Address Box 281, care THE FOUNDRY.

WANTED—Position as superintendent or foreman of foundry; 15 years' experience; familiar with brass and iron work, and mixing of metals. Address W. F. D., Box 269, care THE FOUNDRY.

FOR SALE—Two second-hand foundry jib cranes, 2 and 5 tons capacity, hand cranes, built of wood and iron. Blue print and prices on application. Address James Leffel & Co., Springfield, Ohio.

WANTED—A thoroughly practical foundry foreman, experienced in all kinds of malleable iron work. References required. Address: Burt H. Whiteley, Room 1523 Marquette Bldg., Chicago, Ill.

WANTED—A first-class foreman by a foundry employing 15 to 20 hands, on light machinery castings. A steady job for the right man. Address Fond du Lac Implement Co., Fond du Lac, Wis.

WANTED—Foundry foreman in eastern city; green and dry sand; experienced in heavy pipe and plate work; about 30 molders; state age and qualifications. Address box 273, care THE FOUNDRY.

WANTED—Foundry foreman for all-round gray iron work; only first-class man with good theoretical and practical knowledge wanted, and such man will be well paid. Address Box 268, care THE FOUNDRY.

WANTED—Foreman; man with the proper ability to make gray and malleable iron castings of high grade, competent to assume full charge of foundry employing 250 men. Address A. B. C., Box 274, care THE FOUNDRY.

WANTED—Foundry foreman, to take charge of a small foundry. Must be an A No. 1 man, capable of doing all kinds of work, and acquainted with processes for reducing cost of castings. Address Box 999, Corning, N. Y.

WANTED—Position as foundry foreman by young man of good habits; first-class mechanic; handle men to advantage; well up in molding machines, compressed air and other economic devices. Address, Box 277, care THE FOUNDRY.

WANTED—Position with some large foundry, as timekeeper, foundry clerk, assistant foreman or shipping clerk, by a young man with 7 years' experience with present employer. Competent and reliable. Address CLERK, Box 222, care THE FOUNDRY.

FOR SALE—Or will rent, at low price, the only foundry in a manufacturing town of 4,500 population. Plenty of home work; plant close to harbor; side track of Chicago & N. W. R. R. A good chance for right man. Address CONRAD WERRA, Two Rivers, Wis.

WANTED—Agencies. Well-known, first-class commission agents, established in Brussels, desire agency for articles likely to have market on the continent. Engineering, electrical, or hardware trade preferred. Best references. Apply to V. H. B., 1899, Iron Age Office.

FOR SALE—A No. 3 Whiting Cupola, in use only a short time, with melting capacity of 3 to 5 tons per hour. Diameter of shell 46 inches. Price, $75.00 delivered on cars. Also, a 6-inch Sturtevant pressure blower, nearly new. Price, $35.00. Address WEST SIDE FOUNDRY CO., Troy, N. Y.

WANTED—A malleable iron foundry to locate near Chicago. Inducements: A guaranty of not less than 1,500 tons the first year; and, if corporation is right, can place $20,000 to $25,000 of the stock. Address M. Smith, 57 N. Desplaines street, Chicago, Ill. Box 279.

WANTED—A foundry foreman, married, up-to-date in brass, and in cotton mill machinery castings, to take charge of a shop in a young town. A good chance for the right party. Must be able to handle men and good at cupola. Address EAGLE FOUNDRY CO., Greensboro, N. C.

FOR SALE—On account of old age; foundry and machine shop for one-third its value; $3,000 cash and $2,000 on long time. Foundry business was never better. Don't write unless you have the money. Investigate our city. Address, L. D. WILSON, 110 W. 7th street, Des Moines, Iowa.

WANTED—Foremanship of malleable iron foundry; competent in malleable, gray iron or brass, and in annealing; practical molder, and experienced foreman; have position as foreman now, but wish to make a change account climate; A1 references. Address Box 266, care THE FOUNDRY.